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1871-1872, 1873-1874

DEPARTMENT OF SOCIAL ECONOMY
FOR THE
UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1900

MONOGRAPHS
ON
AMERICAN SOCIAL ECONOMICS

EDITOR
HERBERT B. ADAMS
Professor in the Johns Hopkins University

ASSOCIATE EDITOR
RICHARD WATERMAN JR

XVI

INDUSTRIAL BETTERMENT

BY
WILLIAM HOWE TOLMAN PH.D.
*Secretary of the League for Social Service
and
Special Agent for Department of Education and Social Economy for the United States
Commission to the Paris Exposition of 1900*

THIS MONOGRAPH IS CONTRIBUTED TO THE UNITED STATES SOCIAL ECONOMY
EXHIBIT BY THE LEAGUE FOR SOCIAL SERVICE, NEW YORK

DEPARTMENT OF SOCIAL ECONOMY
FOR THE
UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1900
Director
HOWARD J. ROGERS, Albany, N. Y.

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- III RESOURCES AND INDUSTRIES.—EDWARD D. JONES, *Instructor in Economics and Statistics in the University of Wisconsin, Madison, Wisconsin*
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BY
WILLIAM H. TOLMAN, PH.D.
SECRETARY OF THE LEAGUE FOR SOCIAL SERVICE
NEW YORK CITY

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INDUSTRIAL BETTERMENT.

INTRODUCTION.

The essential characteristic of the industrial conditions of to-day is the substitution of mechanical for muscular power, whether the source of energy for the machine be supplied by water, steam, electricity or air. Accordingly, inventive genius has lavished its powers on the perfection of the inanimate machine, the inert mass of iron or steel, awaiting only the application of the energizing force of nature to make it perform the complicated wishes of the inventor.

In recent years it has been slowly dawning upon the mind of the employer that his human machines—his hands, as he calls them—need attention, need rest, need the best environment for the production of the best results.

Some employers have improved the conditions under which their men work, because they felt that they owed their operatives something more than wages; they felt that their employees had done the labor share in the production of wealth, and that recognition of some kind was due them for that. Others again improved the condition of their operatives because it paid, in actual dollars and cents, and another class have been influenced by genuine altruism.

Whatever may be the motives of the employer, whether he be influenced by the most sordid selfishness or the noblest altruism, the writer claims that the employee has been the gainer by any improvement in his industrial environment. Especially is this so where the wage earner has had the economic foresight to seize these advantages to perfect himself, whereby he makes himself of greater commercial worth to his employer. His wage earning capacity has been increased, and the tendency is towards a recognition of this fact in advancement or a feeling of security in his present position.

The individual who improves his own condition cannot fail to be of greater worth to the industry, in his own home and in the community, facts which are positive assets in industrial, social and civic stability.

The following discussion will be a study of what employers are doing to improve the conditions of their operatives, whether in the industry in question or in their homes, and finally the effect of industrial and social betterment on the community. Within the brief limits that have been allotted to this monograph, it has been impossible to do more than select typical movements that illustrate the various phases of industrial betterment.

PART I.—THE PLANT.

In a review of what is being done to improve the condition of the employee, the subject will be approached with the central thought that the factory or the work shop is the industrial home of the employee, where he must spend at least one-third of each labor day. Money is spent lavishly, if need be, on the improvement and perfection of inanimate machinery, and some employers are realizing that it will pay them to improve and perfect their animate machines; in other words, improved machines are compelling improved men. The first part of this study will deal with the plant.

Perhaps the first step in Industrial Betterment has been an attempt to adorn the grounds of the factory by a stretch of lawn, dotted with trees and flowers, and the decoration of the buildings by trailing vines. In many cases this may have been done unconsciously, the owner's home grounds having been treated in this way, when the thought came to him that there was no reason why his factory grounds should not be treated in the same way. In some cases the decoration of the grounds of the factory and the buildings has resulted from a deliberate purpose to make the surroundings of the worker as pleasant as possible.

DECORATION OF FACTORY GROUNDS.

The Patterson Bros., in Dayton, Ohio, were led to beautify their factory grounds by the observation of the so-called homes along the line of the railroad. They noted the stiffness and the ugliness of fences, outbuildings, porches and yards, and reflected that much of that same ugliness could be dispelled by the bringing in of beauty. They then decided that their own factory and grounds could be improved, and they tried to do the work themselves. Failing signally, they then called in the advice of John C. Olmstead. The lawn received the first attention.

Several years ago they found that bright interiors, plenty of light, bright colored buff walls in place of dingy ones, painting machinery buff instead of dead black, all seemed to make the shops more cheerful and the resulting work more satisfactory. Then they introduced palms into the factory. Then they said that if it was a good thing to make the interior bright, clean and attractive, it would have a good effect to make the outside the same. They wanted the factory men to have pleasant impressions whichever way they looked, and as the bright buff-colored interiors did not harmonize with dirt lying around the grounds, they cleaned them up and, as a natural step, began to plant shrubbery. Naturally this had a good effect upon the men's interest, improved their health, while they worked better and more cheerfully. If all this was a good thing about the factory, it would be equally applicable to the houses in the neighborhood. Mr. J. C. Olmstead was asked to come to visit the houses and the neighborhood. A stenographer took down his suggestions, so that they combined their own theory and Mr. Olmstead's practice.

The General Electric Light Company in Schenectady have decorated the main entrance to their works with beds of flowers. Boston ivy has been planted about the principal buildings near the entrance. It was suggested by the writer

that markers indicating the common name of the flowers, vines and shrubs, would be of great assistance to the employees desirous of purchasing similar plants for their own homes.

In one Ohio (Dayton) factory the women and girls come to work one hour later than the men, for the sake of avoiding the rush and the crowding of the men and women. In a Rochester factory the girls come five minutes later than the men and go to their rooms by separate entrances. Their work rooms are also separated from the men. In a New York Insurance Company's office, the men and women have their work in separate parts of the room. When the girls in the Ohio (Dayton) factory enter the building to begin their work, they are able to ride up to the various stories on the elevator, thus beginning the day with that amount of saved exertion to their credit; both the girls and men go to rooms where the walls and ceilings are tinted buff, this color having been found to be the most restful to the eye. The New York Machinist Press paint their printing presses with white enamel paint, the men calling them the White Squadron. In every new factory there is no reason why the window space should not be as large as possible for the sake of the greatest amount of air and light, two essentials of health in the performance of the best work. In an old factory the expense of replacing the small windows by large ones is comparatively slight.

Many an employee's work is made needlessly heavy by thoughtlessness that does not provide a comfortable seat, which by no means lessens the efficiency of the work. Chairs with comfortable backs, adjusted so as to conform to the various heights of the users, are provided in the National Cash Register Company. Foot stools are an additional comfort, while in one room the chairs are fitted with an adjustable metal rim, that can be used for a foot rest. The water closets are ample and clean, the wash rooms are remarkably neat; muslin curtains and bits of ribbon enliven the room

NATIONAL CASH REGISTER COMPANY

DAYTON, OHIO, U. S. A.

INCIDENTS OF OLD AND NEW FACTORY LIFE.



The Old Way—Luncheon in the Work Room.



The New Way—Young Women's Dining-Room.



Young Women of the Factory Among the Canna-Beds on the Lawn.



Working Under Difficulties—The Old Way.



Where Work is Pleasure—The New Way.



with delicacy and color. It was my privilege to suggest to the employer that he fit up spray baths in the basement of his factory for his men. The suggestion commended itself to him, and what was better, he ordered that each man should have twenty minutes a week in the winter at the expense of the Company for a spray bath, and forty minutes each week in summer for two baths. The women are treated in the same way as the men. At J. H. Williams & Company, drop forgers, in Brooklyn, in addition to the spray baths, each wash trough is provided with a douche, so that the workman can thoroughly clean his head from dust and dirt.

IMPROVED MEN FOR AN IMPROVED FACTORY.

In his efforts to attain the highest degree of excellence in hat making, Mr. John B. Stetson, of the John B. Stetson Company of Philadelphia, realized that two problems were involved; one, securing the finest classes of material produced, and the other, obtaining a much higher order of workmanship than was at that time possible to secure. The first problem was the least difficult. Experience in business, well organized connections and an abundance of capital made it not so difficult to obtain the best classes of raw material, but Mr. Stetson was obliged to overcome a much greater difficulty, that of educating labor up to the highest standard of workmanship, so that he might maintain his reputation for the manufacture of the very finest goods. In order to successfully overcome this difficulty he realized that in the first place his mechanics must be of a higher order of intelligence than had been found among hatters; second, that many years of practical experience in the establishment would be necessary before the mechanic could attain the high standard established; and third, that substantial appreciation and fairness in dealing would be essential to encourage the best efforts and co-operation of the employees.

In order to overcome the first mentioned difficulty, evening

classes, lecture courses and a well selected library were established, giving every mechanic the opportunity of broadening his intelligence, while a well equipped gymnasium was erected for physical education. As hatters of the last decade were of a roving disposition, which interfered with long continued organization, in order that they might be encouraged to locate long enough at this factory to obtain the standard set the John B. Stetson Building and Loan Association was established, where funds could be borrowed at a low rate of interest for the purpose of building homes. A saving fund paying five per cent interest on deposits was also established to encourage economy among the employees and also as an adjunct to the Building and Loan Association.

Many other clubs and organizations have been organized from time to time to serve special purposes. The Union Mission Hospital was organized originally for the sole benefit of the employees, but through Mr. Stetson's beneficence its doors for many years have been open to the deserving poor who require medical attention.

A Sunday school and church, which have very commodious quarters within the factory building, and each of which has a seating capacity of 1,200, were established. The former, having an average attendance of 600, was established by Mr. Stetson to develop the moral character of the employees, as he rightly believed that the mechanic whose moral responsibility is best developed performs the best class of work.

It may be truthfully stated that these organizations have performed all that was expected of them, and their influence has not only been felt throughout this manufacturing organization, but has greatly improved the status of the mechanics, a policy which has excited great interest and favorable comment among the great majority of manufacturers who have either heard of or visited this plant. There is no doubt but that the excellent reputation of this firm can be greatly attributed to the high class of labor employed, and this in turn may be greatly attributed to the advantages

given them and the encouragement which has been offered.

THE H. J. HEINZ CO.

A business that started in 1869, in one room in a small two story house in the suburbs of Pittsburgh, has increased to such dimensions in 1900, that its buildings in Pittsburgh cover ten and one-half acres of floor space, that the product of 15,000 acres of vegetable farms constitute a part of the raw material, that there are salting houses in different states, and branch factories, with their own glass plant. Such an Aladdin-like increase is due to more than the mere payment of wages, and in the judgment of the writer, the kindly care and the fair treatment of the employees have been large elements in the success of the business of the H. J. Heinz Co., of Pittsburgh, now employing 2,500 people. The buildings are equipped, not only with every mechanical and scientific device that can be used advantageously, but the health, comfort, convenience and enjoyment of the employees receive the same careful attention.

Thorough organization is maintained throughout the establishment. The day's work is begun by an individual report at the time-keeper's office, a separate building, the portal to the great works. On entering, I could not help thinking what a splendid object lesson the employees received daily, as they glanced at the beautiful stained glass windows on which were depicted the humble origin of the great works, the seal of the city and mottoes inculcating energy, thrift and contentment. Approaching the factory, I found that the open space, covered with turf and beautiful in summer with flowers, was arranged by Mr. Heinz with a view of affording a bit of natural beauty, increased light and air, and better fire protection for the factories on the three sides of the quadrangle.

Pittsburgh being a large manufacturing city where soft coal is burned, presents a dingy, dirty appearance. Mr. Heinz, believing that beauty and cleanliness have a business value,

built his new factories with glazed bricks so they can be washed down by the hose. In addition he has just given orders to reface his old factory with the same kind of bricks.

On entering the factory one instantly notices the trim and tidy appearance of the girls, with their blue gowns and white caps. The sanitary appliances are ample and perfect. There is a commodious dressing room, and each girl is provided with an individual locker. Adjoining these, are bath rooms and a temporary hospital. A special dining room decorated with pictures and plants has accommodations for 500 girls who bring their own luncheon. By the payment of one cent a day the "coffee fund" is created, the firm supplying the kitchens and cooks, crockery, milk and sugar. I find that there is a surplus from this fund, which is used for entertainments and summer outings. In the same room is a circulating library and an organ. At the close of the meal it is customary to have a five-minute talk from a member of the firm, a foreman or some one of the men who will tell the girls about their departmental problems and their relation to the factory as a whole. Visitors are frequently called upon to make remarks.

Christmas 1899, the large hall was utilized for a Christmas festival, when the largest Christmas tree possible was covered with gifts from the girls to each other. The officers and the rest of the force were invited to the festival, and nearly 1000 people attended. Nine gold watches and two beautiful clocks were presented to some of the heads of departments who had been with the firm from six to twenty-five years, and as the other employees left the building on that same evening, Mr. Heinz presented each with a silk umbrella with silver-handle trimmings.

Another building certain to attract notice is a stable of three stories, with accommodations for fifty horses on each floor. All the interior frame work is of structural steel, the floor beams being filled with concrete and cement, with fixtures of iron and steel, so that an absolutely fire-proof build-

ing has been secured. Windows on four sides, those in front of plate glass, make the interior light and cheerful. The stable is heated with steam, lighted with electricity, and provided with the most improved system of ventilation. Foot baths, Russian baths and a hospital are provided for the horses. Automatic mechanism supplies their food and water ; by pressing a button, the water troughs in each stall are filled automatically. The horses are cleaned by electric brushes, and the harness when taken off is conveyed to the harness room by an over-head carrier, where, by a system of switches, it is sent to its appropriate place.

The last building is 180x100 feet, and in addition to the lower floors, which are utilized for manufacturing purposes, a dining room will be furnished for the men. Other rooms will contain arrangements for spray baths and lavatories. In this building is the auditorium on the fourth and fifth floors, with a large stage and gallery. The seating capacity is 2,500. For years Mr. Heinz has wished that the people on the north side of Pittsburgh should have a commodious hall for public meetings, entertainments, and other social affairs, for the good of the community. This purpose will be met by the auditorium, which will be used as well for lectures, entertainments and Christmas festivals for the employees.

On the top of the building there is a roof garden, affording a cool and healthful breathing spot for the employees and visitors, a passenger elevator, with accommodations for thirty, running to the auditorium and roof garden. The plans and arrangements of this building were personally supervised by Mr. Heinz. The auditorium will be used on Sundays for a Sunday school for the employees and the people of the neighborhood.

The park carriage, as it is called, is in constant use during the summer for an outing in the park of those girls who may chance to be slightly indisposed or who may be convalescent.

PRIZES.

Suggestions for improvement, for reducing the cost, for economy in production, or for general management often occur to the man at the bench, perhaps more readily than to others because he is in daily contact with machines and tools. For the lack of encouragement many important suggestions are not reported at headquarters, thereby becoming of no avail in promoting the greater efficiency of the business. Some employers, keen enough to realize this loss, stimulate their employees by offering cash prizes. For example, one firm offered \$100 for the first prize. In 1898 the prize was awarded to a man at the bench whose suggestion of making a slight change in the formation of the head of a screw, saved the company at least \$2.00 a day.

Unfortunately, the workers feel that good suggestions when made are not credited to them, but are reported to the office by the foreman or superintendent, who receives all the credit. To guard against this, and to insure perfect justice for each individual, the National Cash Register Company, of Dayton, Ohio, place in every department duplicating machines. Thus every man making a suggestion is sure that it is credited to him, because he holds the duplicate copy. At this factory the following prizes are announced for the first six months of 1900,—\$615 in cash prizes will be awarded to employees submitting the best suggestions, the amount to be divided as follows :

1st Prize - - -	\$50.	5th Prize - - -	\$20.
2nd " - - -	40.	15 Prizes each	15.
3rd " - - -	30.	15 " "	10.
4th " - - -	25.	15 " "	5.

By such an arrangement fifty persons will receive prizes ; and even though a suggestion be of minor importance compared with others, the employee submitting it will have a good chance to receive a prize. On the other hand, the first five

prizes offered should be an inducement to each employee to look for defects, and to invent and suggest improvements, with the idea of having his suggestions considered among the best five. For these prizes all factory and office employees (excepting heads of departments and their first assistants) and mechanical inspectors are entitled to compete.

Suggestions may relate to improvements in registers, tools, machinery, systems employed, and to the general management of the business. Employees should submit their suggestions in writing to the Factory Committee, unless they refer to office work, when they should be addressed to the Office Committee. Suggestions may be written on the autographic registers provided for that purpose, or they may be sent by messengers, shop mail, U. S. mail, or left with the doorkeeper.

The A. B. Chase Company, manufacturers of pianos and organs, at Norwalk, Ohio, offer three annual prizes for the best suggestions for improvement on their instruments without increasing the cost ; the best suggestions for improvement that can be utilized regardless of cost ; and the best suggestions for reducing the cost, or for economy in production without detriment to the quality of the work ; and fourth, for the best suggestions not included in the other three classes for improving the business or the condition of the employees.

The above system was begun in 1899. The men were encouraged to offer suggestions freely, and up to the first of the year out of fifty different suggestions about forty were utilized. The distribution was made by the board of directors.

The men are asked to make suggestions and complaints, and small boxes are placed at different places for their convenience in doing so.

“From time to time certain suggestions are made by employees to the management of this Company, which they wish to take up and adjust. The Company is always glad to re-

ceive suggestions or complaints from the employees ; it will be glad to investigate and adjust any that it can. For this purpose we have placed these small boxes around the factory ; and if any employee has any suggestion to make, we shall be glad to have him write it on paper and place it in these boxes. The employee can suit himself about signing his name, but we would much prefer it, and the superintendent will treat all such communications with perfect confidence, and will guarantee that any such will not work to the detriment of the employee, and in most cases will probably work to his advantage. It is the desire of this Company to have the good will of all the employees, and it wishes to adjust all matters to their satisfaction as far as possible.

"Commencing January 1st, we will inaugurate a system of prizes to our employees, and will distribute \$100 in gold every six months until further notice. The money will be distributed in prizes as follows: 1st prize, \$50; 2d prize, \$20; 3d and 4th prizes, \$10 each; 5th and 6th prizes, \$5 each.

"This money will probably be distributed at the annual picnic and annual ball of the beneficial association, and will be awarded to any of our employees making the best suggestions for the betterment of this business. It is our belief that our staff, who are in daily contact with the works of this institution, should be able very often to offer us very valuable suggestions for the improvement of our work. These suggestions may be in regard to the management of the business, improvement in tools, or cheapening the method of handling our work, either by machinery or otherwise, and, in fact, anything that will in any way improve the product or cheapen the cost of the goods we manufacture in this plant.

"The competition for these prizes is open to all of our employees, except those employed in the office and those on regular salaries in the factory ; therefore, every employee, be he boy or man, in the employ of this Company, is open to enter into the competition for these prizes, and we would suggest that you make these recommendations in writing ; that is, if you can do so conveniently ; if not, then give them personally to the superintendent, although we would much prefer to have you hand the recommendation in in writing, dating them the day you make the recommendation and signing your name to same. We will immediately file this recommenda-

tion, will acknowledge the receipt of same to you, and at the end of six months will decide which of the suggestions are entitled to prizes, and distribute the money at that time.

"We shall be glad indeed if all of our employees will feel at liberty to make suggestions at any time. We are very certain that you very often see things that you think could be improved upon, and we have no doubt your suggestions will be valuable to us, and we are perfectly willing to pay for them where they are as suggested in this arrangement.

"If this notice is not perfectly plain to you, we would be obliged if you will call our attention to it, because we want every man to understand just what we are attempting to do here, and we want it understood that these suggestions are open to every boy or man in the employ of this company, with the exception before stated."

The F. H. Brownell Company, Rochester, N. Y., offer cash prizes for the best suggestions. For the greater efficiency of the system, and to encourage the men to continue making suggestions, each man receives an acknowledgment, with a statement whether or not his suggestion was original; and if so, that it is placed in competition.

FIRE PROTECTION.

Fire protection is a matter of vital concern to the employee. At the drop forging establishment of J. H. Williams & Co., Brooklyn, N. Y., the fire signal is a continuous blast of both steam whistles. One man with an assistant is in charge of each room; under them are men for detailed duties, giving the city alarm, placing the fire pails on the platform, closing the windows and doors, the monitor nozzle, and the various lines of hose. Each man has one duty, and he is held responsible for its accurate and intelligent performance. The fire extinguishing and protective apparatus is inspected every week. Each workman has a complete description of the general scheme, with details, so that he may know his individual relation to it. The following are the general instructions:

"Each foreman will see that all apparatus in his department is in perfect working order. If a member of the Fire Department is absent, appoint some one *promptly* to take his place. Do not let the Fire Department be crippled by the absence of its members.

"The best way to avoid fire loss is to prevent fire starting. Cleanliness is necessary everywhere; fires do not start in clean places. Let no rubbish accumulate. Use no sawdust. Keep clean waste in the iron cans or tin cabinets provided for it, and burn all oily waste daily. Keep shaft bearings free from accumulations of oily dust.

"Men in charge of hose lines will see hose properly coiled, ready for instant use; that extra spanners and washers are at hand; that nozzles are screwed tight and *everything* always ready for service.

"In case of fire each department will act under its own head, in general charge of Mr. Redfield, Mr. Amborn or Mr. Reeve. Each man will take his own place and do his own work, not another's. Use care with water; it often does more damage than fire. At night leave elevator level with first floor."

"Well done, Tim," "I didn't think you could do that so quickly, Tom," with other words of approval, were overheard at an unexpected fire drill at this shop last August. The previous drill was made six months before, and the proprietor told me that the alarm would be given at twenty minutes before twelve. It was done, and instantly men appeared everywhere, clambering up the ladders to close the outer shutters, shutting all the windows, pulling out seventeen lines of hose and then manning each, everything in complete readiness for a fire. This, however, was the significant part—within five minutes from the signal all the apparatus had been put away and each man was at work in the shop, as energetically as if there had been no interruption, and he did not know that the whistle would blow again fifteen minutes later for the noon hour. This is one of many illustrations, showing that consideration and kindness to wage earners do pay, and that they have a commercial value. No amount of

THE LUDLOW MANUFACTURING COMPANY

LUDLOW, MASSACHUSETTS



MEMORIAL HALL



THE VILLAGE GREEN



money could buy such intelligence and loyalty as was shown at this fire drill, but it was secured by the knowledge on the part of the employees that they were regarded and treated by the firm as men and not as hands. The firm gains in the fact that the risk of serious damage of fire is minimized, and it has also the full working efficiency of the men at the bench and at the forge. Thus the identity of interest is shown and maintained.

The A. B. Chase Company, Norwalk, Ohio, provide a waiting room adjoining their office, which, in addition to being supplied with magazines and papers for a reading room, has tables and desks, writing paper, pens and ink for the free use of their employees.

HYGIENE.

It would seem as if no necessity existed for any discussion of hygiene in connection with Industrial Betterment,—that it could be assumed that every employer provided for the health of his staff as a matter of course, as a business proposition, that a healthy workman can do more and better work than one whose physical system does not respond to reasonable demands. The Sherwin-Williams Company of Cleveland, Ohio, were persuaded that a certain amount of sickness among their staff was due to the drinking water in their factory. They said that the above was a preventible cause, and accordingly fitted up, at considerable expense, a plant for filtering all the drinking water in the factory.

The Brooklyn Rapid Transit Company give standing orders that whenever it is cold, hot coffee is to be served to motormen and conductors. If coffee was not provided, it is a reasonable assumption that some of these men would use alcoholic stimulants, with potential danger to the safety of the traveling public and the tenure of the positions of the delinquents with the Company.

The Siegel-Cooper Company employ a physician, at the

call of employees at all hours of the day and night. His office hours at the store are from 10 A. M. to 12 noon.

The Bibb Mfg. Co., of Macon, Ga., employ a physician whose duty it is to attend all their operatives without cost. They state that the mortality among the families is less than when they employed physicians promiscuously. This system is very satisfactory to the firm and more than repays them for the cost. I find that a number of employers provide rest rooms for their staff, where any of the girls and women who are indisposed may retire and have any needed medical attendance. They are generally fitted up with couches, easy chairs and in one instance are provided with necessary simples and what to do till the doctor comes.

HOT COFFEE.

One day Mr. J. H. Patterson, President of the National Cash Register Company, passing through his factory about twenty minutes to twelve o'clock, observed a girl leave her work bench with a pail, which she put on the radiator. Calling the forewoman he asked why the girl warmed the glue on the radiator and not in the usual place. "Glue?" said the forewoman, "That isn't glue, that's coffee." On learning this fact he was impressed in the first instance by the loss of time to him, caused by the girl leaving her work bench twenty minutes before twelve o'clock ; and secondly, he said to himself that it must be a pretty poor apology for coffee if it was saved over from breakfast and warmed up on a radiator. On reflection he decided that it would be a saving to him of time and money, as well as beneficial to the girls, for him to provide hot coffee at the Company's expense. This experiment gave so much mutual satisfaction that he next made a few dietary studies of the kind of food which the girls brought and the way in which it was prepared. He found in many instances that there was not enough food and that it was of poor quality. Frequently the food was spoiled in the cook-

ing. Continuing his reflection, he observed to himself, "If my operatives have insufficient or poorly cooked food they are not able to do a full day's work." Then he decided that it would be a saving of money for the Company to provide a warm mid-day meal. An attic in the factory which had served as a kind of store room was cleaned out, large windows put in, and the room freshly painted in cheery colors and fitted up with small circular tables. Now the girls have a dining room flooded with sunshine and good cheer, where a meal consisting of soup, meat, one vegetable, plenty of bread and butter, tea or coffee and one dessert is provided at the expense of the Company. The girls take turns in waiting on each other. The expense to the Company of the dinner, exclusive of the preparation of the food, is about $4\frac{1}{2}$ cents a day for each individual. Mr. Patterson states that under no circumstances would he return to the old conditions, being convinced that the expense of providing sufficient well cooked food under hygienic conditions and surroundings has been more than offset by the increased amount of work in the departments where the girls are employed.

THE CASINO.

The knowledge on the part of the President of another company employing eleven hundred people, that those who lived some distance from the works were obliged to bring their lunches, which were eaten cold at the work bench, caused him to reflect that a change from the work room to a light, airy, comfortable place would be highly beneficial. Then if this place could be fitted up with tables and chairs so that the lunch could be eaten in comfortable surroundings, and better still, if a hot dinner could be served, the men would greatly gain in health and contentment. From this modest provision for the comfort of his men at their noon hour, his original purpose was expanded to such an extent that when completed his men received a Casino, an industrial club house,



fully equipped. The main hall, 59 x 32 ft., is the dining room where those who bring their lunches may eat them ; adjoining is a room 14 x 15 for the women employees. In the same building the President has a dining room where the officers of the Company and guests are entertained. This establishment, The Gorham Manufacturing Company, (silversmiths) Providence, R. I., has installed a chef at the Casino. The prices charged the operatives are very low ; coffee, tea, milk or sandwiches cost three cents each. All prices are in multiples of three. The number of tickets sold for the months of October, November and December, 1899, was several thousand.

A FACTORY RESTAURANT.

A restaurant was provided for the employees of the Cleveland Hardware Company, who felt the necessity for doing something for their employees. The start was made in cleaning up their factory, which had always been kept fairly clean, because it was absolutely necessary to add more machinery in the departments but there was no place to put it and no room to increase the size of the building. By going over the ground very thoroughly, it was found that by keeping all of the material in perfect order, more room could be gained. The conclusion was then forced upon the firm that it was money in their pockets to keep the plant just as clean as possible. Then came the decision to provide a restaurant, but the great obstacle was the lack of room. The factory was crowded, and every available corner was utilized for the manufacture of goods. However, there was a small room which had formerly been used for an office, between two factory buildings, filling up a portion of a light well. This room measured about 9 x 9. There the kitchen was started, with a gas stove. At first coffee and sandwiches were sold. Extension was very soon necessary ; the old kitchen was abandoned and is now used as a serving room. The new kitchen is extended down the light well about forty or fifty feet, and

measures about 7 x 50, being right in between the rolling mill building and factory. It was impossible to provide any room for the men to eat in, but this was overcome by giving each set of six men or more a folding table, which they keep in different corners of the factory, some hanging them on the wall and some standing them up behind machines and benches. Any set of six men is allowed these tables, and appoints one monitor, but he must not be a man that runs a machine. This monitor can take the order from the other men, and is allowed to take their baskets to the kitchen with their order at eleven o'clock, and these baskets are packed in order. The monitor is then allowed to stop work five minutes before the whistle blows, come to the kitchen, and take the basket to wherever the group has located its table. In this way the great rush at the window as soon as the whistle blows is avoided. All those that do not form sets then come up to the window and receive whatever they order. Four hundred men are served on the day turn, and as a rule, the serving is finished in about ten minutes after the whistle blows.

One of the first obstacles was the dishwashing, but this was overcome by supplying each man with a small porcelain covered pail, for whose care he is responsible.

Little cupboards, divided like cup cases in a barber shop, are set up in the rooms, so that each man has his own compartment. At the start two ten-gallon coffee urns were thought essential and were provided at a cost of twenty-nine dollars each. They are very nice as an ornament, but when a man is serving from fifty to sixty gallons of coffee, time is too important to wait for it to run out of a faucet. Two ten-gallon cans are now used, which cost three and one half dollars apiece. A dipper is used in serving the coffee. At the start there was a gas stove, but a hotel range, the most expensive part of the outfit, was put in at a cost of ninety-five dollars. Aside from this, the furnishings are simply pots and pans of different descriptions, which would probably run

the expense up to another hundred dollars. A pint of coffee is sold for one cent, but at a loss, as the best of coffee is bought and served with cream. If boiled milk was used and a cheaper grade of coffee, it could be sold for one cent a pint. The balance of the bill of fare is as follows: Sandwiches, all kinds, 2c. each; Hamburg steak, 1 slice of bread, 2c.; pork sausage, 1 slice of bread, 2c.; pork and beans, 1 slice of bread, 3c.; half dozen crackers and cheese, 2c.; pie, all kinds, 3c. per cut; tablespoonful of mashed potatoes, 1c.; cooked meats, 1 slice of bread, 6c.; puddings, 3c.; oyster soup (on Friday), 5c. per plate; other soups, 2c. and 3c.

On some of these items there is a small profit, to cover waste. A 12c. pie is cut into five pieces; the Hamburg steaks measure about two inches across. The different articles are served on a paper plate, and with them, a piece of bread.

The head cook is rather a high priced man, because he is so experienced that he can take the entire management on his own shoulders. He is paid \$2.50 a day. A girl is paid \$3.50 a week; these two are on the day turn. They come to the factory at about seven in the morning and stay until four in the afternoon. The night man comes on at half-past five and stays until four in the morning; this man is paid \$1.50 a day, the price for an ordinary cook.

The problem of lunching was very troublesome. Many of the men come away from home in a hurry, without breakfast, and they were lunching about all morning. This seemed almost impossible to stop. When the restaurant was started, the plan of shutting down the entire plant for about fifteen minutes and allowing the men to lunch was considered, but it was abandoned, on account of the large numbers, as it was impossible to serve them in that time. Now luncheon is allowed from 8:30 to 9:30 in the morning; during that hour any man is allowed to leave his work and go to the restaurant, purchase what he wants and eat it. A notice was put up that the men should not congregate around the restaur-

ant, nor should five or six men shut down their machines at one time. This plan has not been abused by the men. The superintendent states that during that hour 250 to 300 men are served, and he never has seen more than four or five men at the kitchen window at one time. There are five different departments in this factory. The superintendent also states that the restaurant pays, and they would not think of giving it up. They believe that a restaurant can be run so as to pay all expenses at the prices given; but they also consider that they can afford to pay a little bonus to run this, as they are certain that it is a paying investment. The office people also eat at the works. It was found that it was something of a nuisance to have them eating in their offices, so a small dining room was built for them. On account of the scarcity of room this was built on top of some of the warehouse bins; it is not an elegant affair but answers the purpose.

LAVATORIES AND BATHS.

The Walker & Pratt Mfg. Co., (stoves and ranges) of Boston, believe that care for the comfort of their employees is dictated by sound business, as well as humanitarian, considerations. They find that workmen in a comfortable, well lighted building will do more and better work. They can also secure a better class of workmen when they consider the men's comfort and welfare.

Foundry work is necessarily very dirty, but this firm decided that each one of their workmen may go home clean, hence self-respecting. In the sanitary appliances it was the design that they should be convenient, easily kept clean and repaired with the least delay and effort.

The regular set bowl of the plumber, with its wiped joints on outlet and overflow, is dispensed with entirely. Two substantial cast-iron standards have a plain rectangular slab of iron bolted to them on each side, while central posts support a wooden frame which carries mirrors and a shelf for other

toilet necessities. The wash-bowls are of cast-iron, made in the works and covered with white enamel. Lugs on the under side slip over the longitudinal bar and support the bowl without other fastening. A trough of sheet copper beneath receives the discharge from the bowls and carries it to the outlet at one end, where it falls into a covered gutter in the concrete floor. Thus the whole apparatus is open to inspection and cleaning. Over each bowl is a hot and cold water faucet attached directly to the iron pipe system, so that no plumbing work was required even here. The water pipe system, moreover, is entirely independent of the frame which supports the bowls, so that there is no chance of strains and leaks in the pipe from any movement of the latter. We may add that soap powder canisters are secured to each bowl, a wrinkle of neatness which anyone who has seen a cake of soap in a factory washroom can appreciate.

At this same establishment each molder has his individual bathing compartment in a room 105 x 35 feet. The entire floor is covered with concrete, the water draining to a covered central gutter. The workman stands on a movable wooden grating. Each bathing compartment, 3 x 5 feet, contains hot and cold water faucets, a seat, a pail, and hooks for clothing, while a locker fitted with a Yale lock enables the man to have his ordinary clothing and valuables in security. Overhead incandescent lamps furnish light, and steam pipes keep the room comfortably warm; white paint has been freely used on all the fixtures. One man is in charge of bath and washrooms, so that everything is kept neat and orderly. He has some time left for odd jobs in other parts of the works.

Nearly all the buildings have continuous windows with brick walls up to the window sills, thus insuring the maximum amount of light. The area of glass, including the warehouse and storage buildings, is nearly one quarter the floor area, while in the molding shop, partially lighted by skylights, the area is thirty-five per cent of the floor area. In the molding shop a large proportion of the glass surface is

NATIONAL CASH REGISTER COMPANY

DAYTON, OHIO
U. S. A.



N. C. R. House of Usefulness for South Park.



Corner of Cooking School for Young Women of the Factory.



A Travelling Library in the Factory.



N. C. R. House Extension for Rubicon.

ADVANCE DEPARTMENT.

Clubs, Schools and Societies Connected with the National Cash Register Company, with Headquarters at

The N. C. R. House.

EDUCATIONAL AND INDUSTRIAL.

- N. C. R. Kindergarten for South Park (100 pupils). Daily, except Saturday, 9 A. M.
- N. C. R. Library (South Park Branch of Public Library). Open daily, 12 M. to 9 P. M.
- N. C. R. Advance Club. Advance Club Hall.
- N. C. R. Industrial School for Girls (125 pupils). Saturday, 9:30 A. M.
- N. C. R. Cooking Classes for Young Women of the Factory (32 members). Monday and Friday, 5:30 P. M.
- N. C. R. Cooking Classes for Girls of South Park (46 members). Wednesday, 7 P. M., and Saturday, 2 P. M.
- N. C. R. Sewing Classes for Young Women of the Factory (38 members). Tuesday, 5:30 P. M.
- N. C. R. Millinery Class for Young Women of the Factory (17 members). Friday, 5:30 P. M.
- N. C. R. Embroidery Class for Young Women (104 members). Wednesday, 5:30 P. M.
- N. C. R. Boys' Gardens (43 boys). South of Factory Buildings.
- N. C. R. National Penny Bank (office in Library Room). Open daily.

LITERARY AND SOCIAL.

- Woman's Century Club (280 members). Advance Club Hall, first and third Wednesdays of each month, 12:30 P. M.
- N. C. R. Progress Club (400 men). N. C. R. Hall, every alternate Wednesday, 7:30 P. M.
- South Park Girls' Literary Club (114 members). N. C. R. House, every Monday, 7 P. M.
- N. C. R. Boys' Club (125 members). N. C. R. House, every Tuesday, 7 P. M.
- Woman's Guild of South Park (93 members). Thursday, 3 P. M.
- N. C. R. Kindergarten Association (50 members). Monthly.
- Young People's Literary Club. Thursday, 7:30 P. M.

MUNICIPAL.

- South Park Improvement Association (200 citizens enrolled). Meets at call of president.
- Oakwood Improvement Association (30 citizens enrolled). Meets at call of president.

MUSICAL.

- N. C. R. Band and Orchestra (20 members). Monday, 7:30 P. M.
- N. C. R. Sunday-School Orchestra (8 members). Sunday, 2:30 P. M.
- N. C. R. Janitors' Glee Club (24 members). Monday, 7:30 P. M.

RELIGIOUS.

- N. C. R. Sunday School (800 enrolled). Every Sunday, 2:30 P. M.
- South Park Teachers' Association (25 members). Every Friday, 7:30 P. M.

MISCELLANEOUS.

- N. C. R. Boys' Brigade (100 enrolled). Members of N. C. R. Boys' Club.
- N. C. R. Relief Association (1,100 paying members). Directors' meeting every Tuesday, 12:30 P. M.
- N. C. R. Girls' Gymnasium Class. Every Saturday, 4 P. M.
- N. C. R. Boys' Gymnasium Class. Every Saturday, 2 P. M.

The N. C. R. House Extension.

- N. C. R. Kindergarten for Rubicon (30 pupils).
- Boys' Club, Girls' Club, Mothers' Association, Reading Room, open to residents of Rubicon.

on the north side, thus affording a soft and well diffused light and avoiding the intense glare of sunlight.

Instead of painting the trusses and structural iron work inside the buildings the conventional "foundry red," the color is a light buff. The roof is painted inside with water paint.

A CLEVELAND FACTORY RESTAURANT.

What I consider a unique idea is being worked out by the Sherwin-Williams Company, paint and color makers in Cleveland, Ohio, who wished to make their factory and every department as clean as possible and have their employees observe strict cleanliness. In most factories slight provision is made for a sufficient number of towels, or facilities for washing them, so this Company decided to make enforced rules for washing. In order to do this a large number of towels were needed, the laundering of which could be more cheaply and conveniently done in their own establishment.

Under the present rules, towels have to be changed at certain stated periods, and the fact that clean towels are so often provided is a great stimulus to employees in using them. At the factory laundry are also laundered the table linens and aprons used in the lunch rooms and factory. The Company also provide bath and wash rooms. It was impossible in an establishment of this size to give either the office or factory employees a very long period in the middle of the day for luncheon. They therefore brought cold lunches, eating them in the shops and warehouses—in fact, wherever they happened to be. The firm decided to better this condition of affairs, and converted two floors into lunch rooms. At first it was thought that it would be enough to provide a clean and suitable place where they might eat the lunches which they had brought, but it was very soon found advisable to provide a kitchen where hot meals should be served. Each day a cup of tea or coffee and one hot dish, either soup or stew, is served free.

There is always a selection of extras sold at cost for those who do not care to bring their own luncheon or wish to supplement what they have brought. The men appoint waiters from their own number, one for each table, serving for a week at a time. The free courses are : Monday, beef stew ; Tuesday, barley soup ; Wednesday, baked beans ; Thursday, vegetable soup ; Friday, oysters, fish or chowder ; Saturday, pea soup. Charges are made for extras. Not only do the employees have wholesome and appetizing food under pleasant surroundings, but they become acquainted with each other, and a feeling of good fellowship results. The president and officers take their meals at the lunch room, and the traveling representatives find here a relief from the usual hotel and restaurant fare. The chef, Uncle Eli, had been twenty-seven years at one restaurant, where he had made a famous reputation with the gourmets of the town. He has two assistants for the manual part, but he personally attends to the cooking. There are so many employees that they cannot all be served at the first table. There is no formality at the meals, but on the other hand there is no rudeness. The men appreciate what is done for them and accept it with entire self-respect.

At the Ferris Bros., in their Newark, New Jersey, factory, where they employ 400 women and girls, bath tubs are provided in the factory with hot or cold water, towels and soap. Oak finishings, nickel plated trimmings, rugs and first class sanitary arrangements make the rooms bright and clean. Each employee is allowed thirty minutes for a bath at the expense of the company.

Each workshop is the size of an entire floor, so that the light comes from four sides through very large windows. White curtains at every window give the factory a home-like appearance, which is still further brightened by potted plants furnished and cared for by the girls.

In the various rooms the company provides hot and cold water, mirrors, towels and soap. Over each wash basin is

this request, "Please help with your forethought to keep things clean and nice. Any attention will oblige, (signed) Ferris Brothers." An hour is allowed at noon, and all are expected to begin work promptly at one. Girls living at a distance from the factory are allowed to leave a few minutes before twelve o'clock. A room comfortably furnished is provided for those who lunch in the building. Every day tea with milk and sugar is provided free by the firm, and oatmeal twice a week. Soup can be bought at three cents a bowl. In comparison with the overworked, round-shouldered, anxious-faced girls of the ordinary factory, these employees are trim, tidy, cheerful-looking, with bright eyes and rosy cheeks.

MONTHLY VACATION.

Among the most unique and commendable movements is that practiced at the dry goods house of A. T. Lewis & Son, Denver, Colo., where two days in each month are allowed women in their employ, with pay, at the time when nature demands rest and quiet. This two days' vacation is given only at these times and for the purpose implied. It is the testimony of this firm that the general health of the women is very greatly benefitted; and although the cost to them during the year amounts to several thousands of dollars, the additional efficiency of the workers and their appreciation of the particular privilege fully offsets the cost. It may be stated that this measure was adopted at the suggestion of Mrs. A. D. Lewis.

FACTORY PUBLICATIONS.

Employers are discovering the advantage of what might be called indirect education—that is, teaching outside of classes and text-books. Whatever takes the employee into the confidence of the employer is of great mutual advantage. One illustration of this is the "Chameleon," a monthly published by the Sherwin Williams Company, of Cleveland, Ohio, for their staff and employees.

This firm considers that enthusiasm on the part of their employees is so much capital ; the Chameleon is in no sense an advertising medium. It contains articles from the heads of the various departments, notes and news of interest, comments by visitors and whatever else will tend to bring the branches of the business and staff into co-operative relationship.

F. A. Brownell, of Rochester, New York, publishes monthly the "Bulletin," as a means of communication between him and his employees. A monthly publication of the same name is issued by the Eastman Kodak Company for a similar purpose. The "N. C. R." is a bi-monthly published by the Patterson Bros., of Dayton.

These publications contain a great many items devoted to the commercial and the industrial side of the business, but the pages also relate the impressions of others regarding the social work at the factory, and bits of information regarding industrial betterment at other factories. A few pages will discuss points of hygiene and make suggestions of home improvement. In this way, the wage earners do not feel that they are merely cogs in the industrial machine, but are credited with human intelligence. Several establishments have one or more bulletins for the public posting of items of personal interest to the employees, and brief statements regarding distinguished persons who may have visited the plant.

Education by means of books is rather universal, employers contributing generously to the support of public libraries. In the case of the public library there is no means of arousing a desire for reading, except by the conventional methods, that is, of having the people go to the library. At the National Cash Register Co., the library is brought to the men, by means of the traveling plan. At noon, a case of books and magazines is wheeled about to different parts of the factory, for the sake of supplying reading matter to those workers who have chanced to spend the noon hour in the fac-

tory. This traveling library has been the means of arousing a desire for reading, which desire receives continual stimulus in the fact that a small building just opposite the factory is a branch station of the public library at the city.

AN OFFICERS' CLUB.

Whatever increases the individual worker's store of practical technical knowledge makes him of more value to himself and to his employer. The more he knows of his particular line of work, the more sure he is of holding his present position. His employer is also desirous that he should remain, for able and honest men are at a premium. The complexity of modern machinery and the delicacy of its operation are demanding workers of a high degree of intelligence, so that they may respond to the increasing demands upon their knowledge. Not only is education in the specialized industry of value, but every opportunity is now being afforded for training in the school of common sense, whose diplomas are based on individual tact and discretion—what the man in the street calls "horse sense." In illustration of the point is the Officers' Club at the National Cash Register Company, where twenty-five men from the different departments meet for dinner each day at the expense of the company. It nearly always happens that some guest is present or some local celebrity. The primary object of the reunion is social, but to my mind this purpose is far outweighed by the educational, whereby the men come in touch with others from the outside, getting new ideas, new points, which cannot fail to enlarge their mental and industrial horizon.

In the early part of the century the Sunday School was a large educational factor in the community, many of the members learning to read and write there. An interesting reversal to type in many respects is the Factory Sunday School at the same company. The large hall is utilized for the opening exercises, which are like those of the usual school. Many a school has so-called lesson papers which are about as

uninteresting for children as can be imagined. Here the Advance Department of the factory prepares the papers, which are entitled "Pleasant Sunday Afternoons." They are made as attractive as possible by good press work and illustrations. Prizes will be awarded at the end of the year for the best kept set of papers. A large place in each session of the school is made for practical talks and hints that will help the people in the daily life, in the home, the street and the city. One Sunday a talk was given by a city dentist on the hygiene of the teeth. Mr. Patterson has a collection of nearly 7000 lantern slides which he uses in the school to teach art, history, travel, the sanitation of the home, personal hygiene ; just what the wage earner is interested in knowing, will help him to make more of life. Each spring thousands of flower seeds are distributed to the children, who plant and watch them, being stimulated to do their best by generous prizes for the best kept back yards, fences and window boxes. The great difficulty in this, as in other Sunday Schools, is to secure teachers. At this Factory Sunday School the following device was hit upon. Each class has a leader, and the members are requested to bring a quotation, which is read and commented on by the one who brought it ; then by vote of the class, the best quotation for the day is put in the class scrap-book. Towards the close of the session, the selected quotations from the classes are read, and by the vote of the school the best one is put in the school scrap-book. This is practically an automatic teacher. This last summer the sessions of the school were held in the grove of the old homestead of the firm.

One Sunday afternoon lantern slides were used to illustrate and explain the regular lesson for the day. Mr. Patterson then asked the children what other subjects they would like to have taught and they replied, "cooking, carpentry, wood carving, stenography and molding, etc., etc."

They were shown that the basement of the schools should be provided with baths for the use of the children in the day

time and their parents at night. Attention was called to the importance of securing a certain lot, occupied by infirmary buildings and adjoining the Wyoming Street school-house, which the city was about to abandon and sell. The lot is large enough for a cooking-school, a manual training school, and in addition for gardening work such as is provided in France. The children were told that it was their duty to tell their parents to get up a petition to the city to save that lot for school purposes and not sell it; that it rested with the boys and girls of the Sunday School whether this should be done or not, and that they should speak to their parents in regard to it when they went home, and tell what they would like to see on the lot. Then they were shown that if they had training of that kind when they left school they would have an earning power of three or four dollars per day, instead of having a hard time to get work at \$1.50 per day. It was stated that two-thirds of the people who were out of work during the last panic were out on account of ill health, and that this might be overcome by teaching preventive hygiene; and that good cooking would make three dollars' worth of food go as far as six dollars' worth if badly cooked; that the whole trouble lay in bad politics, for ignorant men were elected who knew nothing about these things, to spend our money. To illustrate, a story was told of the sewer which they were going to build, at a cost of \$1,000,000, which was only stopped by sounding the alarm in the newspapers, but not till \$60,000 had been spent. If that sum had been spent in the right way, the boys would have all these advantages. Now they haven't them and must work hard always; whereas, they might have had an opportunity to go across the ocean, and here pictures of Venice were shown, saying that if the boys were successful men they could visit all of these places and see strange sights.

A FACTORY LIBRARY.

Application was made to the Cleveland Public Library to establish a station at the works of the Cleveland Hardware Company. It was necessary that the firm should first get fifteen of the men to use these privileges. A notice to this effect was posted in the factory, and twenty-four names were handed to the time-keeper within two days. The general superintendent then made arrangements with the library, and before arrangements had been completed these names had increased to thirty-five. The Cleveland Public Library then established an authorized station at the works. The shop carpenter made a book case out of common pine, shel-laced, with glass doors. The library then furnished any books called for, giving a complete assortment of different books, also a file and cards, and, in fact, a complete set of office ma-terials, even to pens, rubber bands, and postage stamps. Any man in the factory hands his name to the timekeeper, and tells him what class of books he wants to read, whether it is fiction, history, travel, or any other kind ; if there is a partic-ular book that he wants, he is furnished with an application card. The catalogues and lists of the library are at the fac-tory, where he can then make application for his book ; if it is not at the station, they telephone to the library. If it is in, the book is laid aside, and the factory team, which passes there every day, stops and gets what books are due. The books are collected in the office once each day and sent to the timekeeper's office, to be given out to the men. Mr. Adams, the superintendent, is so much interested, that he per-sonally does the selecting, and he finds in most cases that the selection is left to him. The records and reports to the li-brary are prepared by one of the young ladies in the office. It generally takes Mr. Adams about one-half or three-quar-ters of an hour each noon to make the selection of books ; the young lady probably spends another three-quarters of an hour doing the other work, so that this is practically all the

expense there is to the company. In December 327 books were circulated. At present there are 100 men using the library; of this number fifteen are office people, and the balance are from the factory.

The class of reading is shown by the December report :

Biography, 7 ; Philosophy, 9 ; Religion, 1 ; Sociology, 11 ; History and Travel, 72 ; Science and Useful Arts, 10 ; Literature, 4 ; Juvenile Fiction, 1 ; Fiction, 201 ; German, 11.

In fiction, the books are the very best ; in selecting many of them Mr. Adams has pursued the plan of asking different friends and employees in the office to go over their own private library, selecting the best books and giving him a list of them. These lists were sent to the library as applications for books.

To increase interest in the library, the plan of obtaining a permanent library was begun, and to further stimulate the interest and the appreciation of this library, the management have been writing all the prominent people in the country, and, in fact, the world, asking them to donate one book with their signature on the fly-leaf, thus giving an autograph library.

APPRENTICESHIP.

There is a growing feeling among all of the better trades that of late years there has not been a tendency in young men of the rising generation towards apprenticeship and the consequent thorough education. Additions to the number of skilled workmen have been largely from abroad. It is believed that this is a mistake, and that the trades of to-day should and do offer inducements which should attract the attention of many of our bright young men of artistic or mechanical temperament. Some firms believe that the manufacturers can do much to revive interest in the apprenticeship system, not upon the old, rigid lines of binding out, but upon a basis which would more nearly fit the condition of the boys who surround us.

With this end in view, the Gorham Mfg. Co., silversmiths, have remodeled the rules governing the education of boys in the twelve or more distinct trades operative in that factory. The new feature which has been introduced, and which has been received with considerable enthusiasm, is a system of merits or premiums, which are placed within the reach of every apprentice, and which are awarded at the end of each apprenticeship year in accordance with the marking received during that year.

At the end of a term of successful service a certificate is given, which in itself would be an incentive when coupled with the name of a firm of more than local reputation. By the terms of apprenticeship, applicants must be at least sixteen years of age, but not more than eighteen, physically sound, of good, moral character, and have received an education equal to that obtained in the grammar schools of the city of Providence.

Each candidate must serve three months as a term of trial. At the expiration of this period, if he has proved suited to the particular trade to which he desires apprenticeship, a formal agreement will be executed. Apprentices will, in all cases, serve until the anniversary of their apprenticeship following the attainment of their majority and such time subsequently as shall equal the entire lost time during the period of service.

Lost time during an apprenticeship year shall be considered as the difference between the total hours worked by an apprentice and the total hours that the factory is in operation during the same period, exclusive of overtime. A year's service will not be considered as completed, until lost time has been made up. Overtime made by an apprentice will not shorten the year of service, but may be counted against time lost during the same year.

Apprentices will be paid according to the following schedule: For the first year's complete service, at rate of \$3.00 per week, for the second year, \$4.00 per week, for the third year,

\$5.00 per week, for the fourth year, \$6.00 per week, for the fifth year, \$7.00 per week.

In addition to the above rates of payment, premiums may be earned by those who are diligent and efficient in their work, and who by their general conduct exhibit a desire to improve every opportunity to become expert at their trade. The payment of these premiums is entirely voluntary on the part of the company, who reserve the right to pay the whole, a portion, or none at all, according to the record of the apprentice. The eligibility of each apprentice to the above mentioned premiums will be determined by a system of merits and demerits recorded at the office of the company, and will be based upon the following : (a) Adaptability, (b) Application, (c) Skill of Perfection of Work, (d) Rapidity, (e) General Conduct.

Limit of Premiums : First year, \$25.00, second year, \$35.00, third year, \$50.00, fourth year, \$75.00, fifth year, \$100.00.

Apprentices are required to conform to the rules and regulations which have been or may be adopted for the government of the factory, and the company reserves the right in its sole discretion to terminate its agreement with any apprentice, and also to discharge from its employ any apprentice for violation of said rules and regulations, or for persistent lack of industry, or improper conduct within or without the factory.

The company agrees to give faithful instruction to all apprentices, and furnish them with a proper certificate at the expiration of their period of service.

SCHOOLS FOR STORE BOYS AND GIRLS.

In the commercial house of Daniels & Fisher, Denver, there is a school which includes in its membership as far as possible all children under the age of eighteen. The present enrollment is thirty-eight, twenty girls and eighteen boys. They are divided into six divisions, and these six divisions united into four classes, each class reciting forty minutes.

The school opens at 8.30 and closes at 11.30 A. M., every day of the week except Monday. As this is a very busy day in the store, all school work, with the exception of one class of girls, is suspended.

The course of study consists of arithmetic, United States history, reading, spelling, geography, and the discussion of current events. Each morning the teacher is furnished with the daily newspaper, and takes the most important topics which she can discuss with interest to the children, explaining them and answering all questions. The text books used are the property of the store. Each child is provided with the necessary books with which to prepare the lessons, and is allowed to take them home at night. The text books used are as follows :

McMaster's United States History, Belfield & Brook's Rational Arithmetic, Redway & Hinman's New Natural Geography, Stepping Stones to Literature, Higher grades, Stepping Stones to Literature, Seventh grade.

The school room is provided with all the necessary blackboards, maps of the United States and the world and all other appliances. It is the idea of the proprietor of the store to gradually increase the usefulness of the school, and one of the proposed improvements is to establish a regular circulating library containing books of interest to the children.

Each Monday night from five to six the Cleveland Window Glass Co. have lectures in their store, inviting all their employees who are interested to attend. From fifteen to thirty are present at these talks, which are thoroughly practical in their nature. The firm states that a great deal of good has been accomplished, because these lectures increase the interest and knowledge in the business and enable the firm to come in closer touch with their own men and to judge of their capacity for business. No prizes are offered, but the employees are promoted as fast as they prove themselves worthy of it. The boys are encouraged to attend the night schools, and about fifteen of them have attended the Y. M.

C. A. classes this winter, studying chemistry, mechanical drawing, arithmetic, etc.

ENTERTAINMENTS AND LECTURES.

The League for Social Service was requested by Messrs. West & Simons to suggest and secure the talent for a series of monthly meetings, to consist of illustrated lectures on current topics, with occasional musical entertainments, for the 1000 women and girls in their employ. They were particularly desirous of having the lectures illustrated, for the sake of educating the eye as well as the ear. This same firm have opened a night school, with an average attendance of fifty-five. Classes are started in response to the wishes of a number of students. For example, the last was one in mechanical drawing.

RECREATION.

The general attitude of employers is quite different from that of one who remarked that in his business they used up a man every six years and then hired new ones. Men are saved and not used up. They are beginning to wonder what their employees do with their time outside of their working hours in the factory, how they spend their evenings, what kind of recreation they have and so on. They again realize their identity of interest, for it is far better that the employee uses his outside time so as to make him more ready for work on the morrow, rather than that he should do all sorts of things that will dissipate his strength, energy and moral fibre. Accordingly movements for recreation are of importance.

In a visit to an industry where nearly 4000 men and boys were employed, the superintendent asked for suggestions. I made several ; among others I told him that there was no reason why that open lot belonging to the company just opposite one of their shops should not be enclosed and then fitted up with sand pens for the little children, swings for the

older ones, a wooden shelter or a tent where the mothers could sit if they wished to watch their little ones, and a simple outdoor gymnasium where the boys and men could come after their work. By that means, I said, you show your practical interest in the families of your own men ; you are doing something for them. The children in these families are coming into your shop in a very few years ; how much better for you that their bodies have been somewhat strengthened by exercise, and their minds disciplined by regulated play. Every minute that your boys and men spend in such a way keeps them out of the saloon, with its possibilities of unfitting your employees to do a healthy day's work on the morrow, whereby your business suffers. Then, too, the knowledge on the part of the women of the family that you have done this will be a conservative force, used on your side in the event of a strike or a disposition on the part of the men to any kind of action that will hurt your interests.

Every small park, open space, outdoor gymnasium, swimming pool, roof play ground on the public schools, band concert, popular musical entertainment, is a safety valve for the escape of passion, discontent, unrest, all of which confined would become dangerous to the community. Public recreation should receive the heartiest support of the employer ; in the first place, because it is his duty and the citizen's right to have the opportunity of making the most of life, and recreation occupies a prominent place in this. Any opportunity for humanizing the individual wage earner is a gain for his employer.

EMPLOYEES' ASSOCIATIONS.

Siegel-Cooper's New York store has an employees' association which is a regularly incorporated association, supported by a small graduated tax on the salaries of the members, entertainments and contributions by the firm. In addition to the benefits of insurance, medical attendance and

financial assistance, the girls enjoy at the expense of the company a vacation period of one week.

The steamer Republic every Saturday morning carried eighty girls from the store to Long Branch. The party was in charge of a matron, who saw her proteges safely landed in the Wheeler cottage, where a week of solid, health-restoring enjoyment, free from all financial worry or business cares, was enjoyed. The girls rode bicycles, bathed in the huge salt water rollers, with brave, strong-armed life-savers watching their every motion ; experienced the delights of the gorgeous trolley cars that carried them to Asbury Park, or lounged about the well lighted and artistically arranged gardens of the Wheeler cottage.

Every indoor amusement ever devised was at hand should inclement weather forbid outing trips. Lawn tennis and croquet grounds attracted the athletic girls, while dreamy hammocks and big, embracing, sleep-inducing chairs under the shade of tall trees invited tranquil rest. How the hard-working girls enjoyed this week of rest and freedom can be only imagined, while the strength gained and stored up against the fatiguing demands of the other busy fifty-one can be hardly overestimated.

At the Ferris Bros. factory, Newark, N. J., in connection with the dressing room on the second floor is a room 116 feet long, furnished with a piano ; this affords an opportunity for the girls to sing or dance during the noon hour after lunch. In the same room is a stock of current literature, magazines and periodicals, also health lifts for exercising ; all of which are reserved for the exclusive use of the employees.

The National Elgin Watch Co. provide a gymnasium, which, in addition to a fine hall devoted to athletics, amusements and the like, has a fine auditorium, in order that entertainments, amusements and healthful exercise may be afforded every employee of the factory at little or no cost.

January 4, 1900, the first of a series of annual reunions and banquets was given by the Gus Blass Dry Goods Co.

of Little Rock, Arkansas, to their employees, each of whom was privileged to bring his wife or a lady friend. The formal dinner was followed by a dance.

PARKS AND PLAY GROUNDS.

Hopedale, Mass., where the Draper Company has its works, had a population May 1st of 1400 people. The company's pay roll numbers 2200, showing that a large number of people live in the adjoining towns.

The local corporation and individuals connected with it represent a very large per cent. of the taxable property in the town, so that certain improvements—for instance the grammar school building, the park, the character of the schools, roads, and all matters calling for large expenditures—are, in a certain sense, governed by the local company, although not paid for directly by it.

Under the Massachusetts law, in accordance with certain conditions, land may be set aside for parks. As to the park, the first appropriation in this direction as made by the town last summer, with the land taken, includes 140 acres, nearly the entire shore of the mill pond. There are three different places on the east side of the pond where the land runs up to the town road parallel with the pond, where later on roadways connecting with the park can be easily built. This tract of land comprises some of the finest natural scenery in the town, which is included in it or can be seen from it. There are three very attractive groves, one of them a pine grove with large trees and a fine spring, making a very desirable place for picnics within a little over one mile from the center of the town.

Six acres of the park are located diagonally opposite the school. This lot has been drained, plowed and fertilized for the purpose of a play ground for the children of the grammar school and the others in the town.

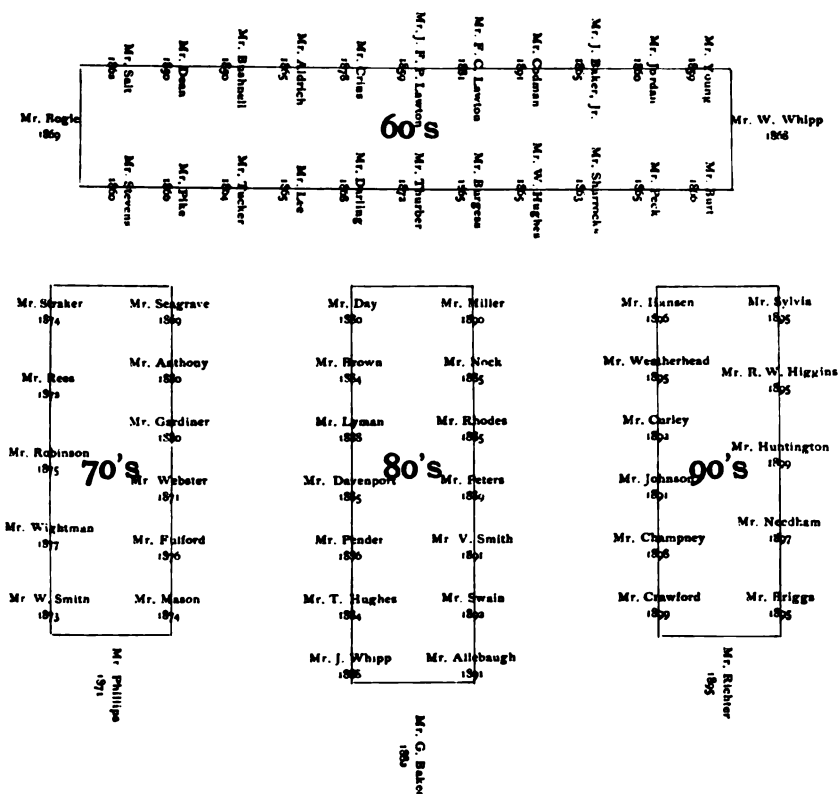
GORHAM MANUFACTURING COMPANY

(SILVERSMITHS)

PROVIDENCE, R. I.



THE CASINO—A CLUB FOR THE EMPLOYEES.



BANQUET AT THE CASINO FOR THE HEADS OF DEPARTMENTS, THE SEATS OF HONOR BEING OCCUPIED BY THE EMPLOYEES ACCORDING TO THE LENGTH OF TIME THAT THEY HAD BEEN IN THE SERVICE OF THE COMPANY.

The employees have comparatively few places where they can meet for their social gatherings ; the ordinary halls in the city have a high rental, or where low are connected with saloons. The Pattersons allow the use of their factory dining room, under certain restrictions, for social gatherings or dances. The Pope Bicycle Co. allow the use of one of their large rooms. Athletic clubs of all kinds are generally maintained, as well as musical and social organizations. Many firms provide annual excursions for their staff. The Pattersons gave all the boys in their employ, who were members of their clubs, the outing of two weeks in a summer camp near Dayton.

CLUB BUILDINGS.

At Elmwood, near Providence, a club-house was built by President Holbrook, at an expense of nearly \$15,000, for the 1100 employees in the Gorham Manufacturing Company.

The casino is two stories in height, of colonial architecture, with a sloping roof, forming broad verandas. In addition to the dining and lunch facilities, which have been described elsewhere in this monograph, is a thoroughly equipped library. The second story is surrounded by a wide balcony, affording room for additional people at the entertainments in the main hall. There are also sleeping rooms, bath rooms and lavatories. Two of the sleeping apartments are reserved for the use of travelling salesmen or guests of the company. The basement contains the cycle room, with a capacity of 400 wheels. Before that casino was built the men checked their wheels in an old building, each paying ten cents a week to a man to watch them. The new cycle room is equipped with numbered racks, with a man in charge. Arriving at the casino the cyclist leaves his wheel with the attendant, passing through the cellar and out by the entrance facing the factory. On leaving work, he receives his wheel at the side entrance, making his exit by the Earl Street side. The rear of the basement contains a storage room and a wash room fitted

with set tubs. Adjoining this is a fully equipped bath room. The casino is lighted by electricity and gas, and is open at all times to the employees, who have the privilege free. The expenses of maintenance are met by the company.

THE STEEL WORKS CLUB.

The Steel Works Club of Joliet, Illinois, has for its mottoes, "Self help, Politeness toward and Consideration for each other."

This club was organized by the Illinois Steel Co., in order to give its employees an opportunity to help each other. Its object is "the promotion of healthy recreation, social intercourse between members, and to afford opportunity for physical, intellectual and moral development."

The Illinois Steel Co. undertook to pay the superintendent, librarian, to furnish heat and light, and to keep the building in repair; but in addition to the expenditures named, they are now paying the physical director and two janitors. They are also meeting other expenditures, until it is receiving the benefit of the income from \$200,000 of their capital.

It is not enough to equip most completely a club house and then expect it to run automatically, but in some way a large measure of interest and working cooperation must be secured from the employees. A recent statement issued by the club members shows their recognition of the identity of interest.

"It is but right and proper that we should show our appreciation of the efforts of the Illinois Steel Co., and the efforts of those members who are giving their time and cooperation in the interests of this club, by the members generally doing something themselves for the club. It is therefore suggested that those enjoying the privileges of the billiard room should devise some arrangement in order to pay for the re-covering of the tables and the repairs needed.

"We have opened a poll so that our members may vote for the books they desire bought for our library, and it is suggested that some arrangement should be devised so as to meet this expenditure. The dues of the club are not sufficient to enable us to pay anything towards the salary of the employees or the repair of billiard tables, bowling alley, or the purchase of new books for our library.

"There is no class in this club that is self-sustaining. In other institutions of this character, where the dues are two to five times the amount paid by the members of this club, there is an income from some parts of the institution, but not so with this, and we should try and overcome the loss. Let us go to work for our club, improve it and do something for fellow members. The obligation rests upon every man to do something for his neighbor. You should do it for your fellow members of this club."

PART II.—THE WAGE EARNER'S HOME.

Early in the history of the National Cash Register Company, they awoke to the fact that they were losing money every day. Realizing that these conditions could not continue, their awakening led them to investigate the causes of the trouble and its solution. Ignorance, indifference, lack of sympathy confronted them. To overcome these obstacles a point of contact was necessary between employer and employee. A hall was engaged to afford a common ground of meeting, where, by means of talks, conferences and pictures, the employer showed them tactfully and insistently their identity of interest. The key to the whole industrial situation Mr. Patterson stated was sympathy, and on this foundation he proceeded on his work of industrial and social reconstruction. In 1890, having successfully established his new system in his factory, he began to plan how he could help his people to improve conditions in their own homes. Most of the employees lived about the factory in a suburb of the city known as Slidertown, marked by ill-kept streets, unkempt yards, bordering on dirty alleys filled with refuse.

To-day the same people live in the same part of the city, but Slidertown has given place to South Park, rejuvenated and regenerated. On the testimony of a leading real estate agent in Dayton, property in this district has increased from thirty-three to fifty per cent. How was this change brought about? The problem was to help families where moderate wages were earned, showing them how to use their income to the best advantage, and inculcating lessons of cleanliness and thrift, the purchase and preparation of wholesome food, the proper care of children, healthful recreation, and the beautifying of the home.

MODEL COTTAGE.

By way of an object lesson, Mr. Patterson set aside a cottage containing a parlor, bedroom, dining room, kitchen and bathroom; then he installed a deaconess, who made this cottage her home, which became a kind of social center for the neighborhood. It was his plan that these rooms should be furnished inexpensively, so that prospective couples would know just what they would need for the furnishings of their new home, and what they would cost. These rooms also demonstrated that the selection of wall paper of graceful patterns and delicate designs cost no more than the stiff and ugly ones, and that a carpet could be selected in harmony with the paper and other decorations.

From the fact that the deaconess was engaged to reside here, she was able to give her entire time to the direction and supervision of every kind of activity that might be brought under a department of home making and keeping. To get in touch with the mothers, a Guild was organized for the purpose of counselling and advising with them on home problems. Then too, the fact that they met together socially developed a communal feeling, and made each one feel that she had something to give as well as receive from others. Thus these conferences with the mothers made them realize

their responsibilities' in providing attractive homes not only for the children but for their parents.

HOME KEEPING.

Another small building on the factory grounds is used for practical instruction in cooking. Not only are the girls and women taught how to cook, but they are shown how to purchase food stuffs most advantageously. It has been my observation that ignorance, particularly among the wage earners, is largely responsible for extravagance in the purchase of food supplies. For this department of domestic economy a graduate of one of the best training schools has been engaged. By means of tact she rouses the interest of the girls and women, and then shows them by actual demonstration what food values are, and how by care and preparation inexpensive but healthful foods can be prepared most appetizingly. Thus she proves that care in the purchase and preparation of wholesome food saves the family money each week. Instruction is also given in cooking dainty and palatable dishes for the sick. She also arranges the daily bill of fare for the officers' club, and the mid-day dinner that is served at the expense of the company to the girls and women. ✓

BOYS' VEGETABLE GARDENS.

This same company, having noticed the success of the "Vacant Lot Farms" of New York, adapted the idea to Dayton, by setting aside a tract of land belonging to the company and devoting it to the boys in the families of its employees and any others who might apply. This tract was divided into small plots 10 by 130 feet and was called the Boys' Vegetable Gardens. The landscape gardener belonging to the company advised the boys and instructed them in how to plant and care for their crops. In the summer of

1899 not only was this of great value to the community in keeping off the streets the boys, bent on all sorts of potential mischief, but the lads received useful instruction which would last them all through life. There is also the possibility that these boys might receive more than a passing desire for the cultivation of vegetables and flowers by being won over to a love for the cultivation of the soil rather than thronging into the cities already congested. Last year forty-three families were made happy by fresh vegetables and flowers brought from the Boys' Gardens, thus saving that amount of money which the family would otherwise have spent for these same vegetables. The most ambitious utilized their plot several times by a succession of crops. In addition to all this, the boys were still farther stimulated by various cash prizes from \$15 to \$3 each, for showing the best results. Every bit of training inculcating a love for thrift and order is of value to a community, but especially so to employers who have come in touch with the boys, thus gaining an influence over them, developing a capacity and love for work. Later, when the employer is looking for trustworthy young men to add to his working staff, he instantly thinks of the boys whom he has helped to train.

The following crops are raised : Lettuce and radishes, seed onions, set onions, carrots, red beets, peas (two varieties), wax beans, green snap beans, butter beans, early cabbage, early dwarf potatoes, late tomatoes, potatoes, sweet corn (two varieties).

Some of the ground is utilized twice. In addition to the above are planted celery, mangoes, squash, transplanted beets, cucumbers, late cabbage, second crop of sweet corn, turnips and two or three crops of radishes.

John Bower won the first prize two years in succession, not only on the vote of the judges, but by the agreement of all the other boys in the competition, so completely did he surpass them, that there was no jealousy regarding his work. The garden instructor asked him to write a sketch of himself.

"DAYTON, Ohio, Nov. 4, 1898.

MR. SEITNER,

Kind Friend :

Received your letter a few days ago and was rather surprised you asked my age. I was 14 years old the 4th of July ; was born at 135 Fairground Ave., and still live there with my aunt and uncle ; went to school seven years and passed for High School, and as my uncle was out of work so long, my aunt could not afford to send me to High School, but would have liked to. I am now working at the 'German Newspaper Co.' I can't work myself up here because I can't read German. I think the boys' gardens is one of the best things there is. If they are interested it learns them how to work and cultivate the ground and many other things. I enjoyed working in my garden and think they are worth their weight in gold. I would like to take another garden next year but I am working and would be too old. You asked me what I do evenings ; on Tuesday I go to the 'Club,' and Wednesday I go to drill. Other evenings I generally go to the N. C. R. Library and read awhile or else stay at home. On Sunday I go to Sunday School in the morning, and in the afternoon I go to the N. C. R. Sunday School. Among the books I have read are 'Travel in Europe,' 'Life of Napoleon,' 'Life of Columbus,' 'Gorilla Hunters,' 'Franklin in the Woods,' 'Wreck of the Golden Fleece,' 'King Arthur's Round Table,' and a lot of others which I can't remember. I am now reading 'Two Arrows.' The papers I have read are 'Youth's Companion' and the 'Young People's Weekly' and I enjoyed them very much. I have told you all so I will bring my letter to a close.

Good Night, Your garden boy, JOHN BOWER.

CHILD TRAINING.

The N. C. R. House, or as it has been called, the house of usefulness, is a center for a large share in the work of home keeping. This manufacturer, in common with others, interprets the word home very broadly, and does not confine its efforts to its four walls. He considers that whatever he does to improve the father, mother or child element in the

home is important in social and industrial welfare. I find accordingly that he lays especial stress on the kindergarten, employing three trained kindergartners. The classes meet in the ample rooms, where the mothers are always welcome to visit and inspect the work in progress. When recess comes the children are turned loose on the broad expanse of the factory lawn, where they can romp and shout to their heart's delight. The kindergarten, especially in the industrial quarters of the community, is of immense significance to society, because it is the vestibule through which the child enters upon the acquisition of those ideas which will largely shape his after life. The lessons of order and neatness, the discipline of regulated play, the education of the eye in the harmony of color and the training of the ear in rhythmic music are acquisitions, making the child of greater value to himself, and, if he can follow up the good start which has been made for him, tending to make him of greater wage earning capacity, to say nothing of the enlargement of his powers of general appreciation of what is within his grasp.

A COMMUNAL HOME.

On the hills sloping up from the Hudson near Scarborough are the Briar Cliff Farms, eight thousand acres, where the proprietor operates model farms and dairies. For those of his unmarried employees who were obliged to board at various places and live comparatively isolated lives, he planned a communal home containing seventy individual bedrooms. The building is one hundred feet long and four stories in height; the men enter a large hall, 30 x 30 feet, which, when not used for meetings and entertainments, serves as a smoking room. The high ideal embodied in this room is illustrated by a series of striking mural mottoes:

"God hath given thee to thyself and saith, I had none more worthy of trust than thee; keep this man such as he was by nature, Reverent, Faithful, High, Unterrified, Unshaken of Passion, Untroubled."

"Speak gently—it is better far to rule by love than fear."

"If a cobbler by trade, I'll make it my pride
The best of all cobblers to be,
And if only a tinker, no tinker on earth
Shall mend an old kettle like me."

"Teach us to be kind before we are critical, and sympathetic before we condemn."

To the right of the hall is a large parlor and reading room, provided with books, newspapers, magazines and games ; to the left a commodious dining-room, private dining-room and kitchen. Upstairs, in addition to the bedrooms are handsome bathrooms, with shower and douche baths for the use of the men.

The house was opened Christmas day, 1899, Mr. Law presiding and remarking that he hoped that this building would prove a happy home for the men and would manifest the cordial cooperation between employer and employee at the farms. Additional inspiration was afforded by a quartette from the Briar Cliff Orchestra, organized by the employees.

The National House, as it is called, provides accommodations for one thousand operatives of the National Elgin Watch Co., Elgin, Ills., at dinner, and affords well furnished, well ventilated, steam heated rooms for several hundred young ladies and gentlemen who preferred such a home to that of boarding houses about the city. These excellent accommodations, both meals and rooms, at the National House were furnished upon a basis of cost which made a very important reduction in the prices of boarding, and at the same time greatly improved the service received by operatives in every part of Elgin.

The hotel is fitted up with all modern conveniences from cellar to attic in the most perfect manner, and as now completed the building, or buildings, make an imposing appearance. Its generous proportions and its equipment will be better understood from the statement that the dining-room

measures forty feet in width by one hundred and fifty feet in length. All of the rooms are furnished with steam heat and every modern convenience, particular attention being given to ventilation. Enough rooms are provided to accommodate 350 persons with a cosy and comfortable home within 500 feet of the factory entrances. Besides this the hotel has spacious corridors, large parlors, a well-stocked library free to employees, and a well equipped billiard room.

INDUSTRIAL SETTLEMENTS OR COLONIES.

Industrial Villages or Colonies like Port Sunlight and also those of Essen are well known. In this country Vandergrift, Hopedale and Peacedale are fairly typical of the plant belonging to the industrial question and the aggregation of workingmen's houses, schools, churches, halls and club houses. The advantages of such settlements as the above result in a communal feeling and a strong neighborhood attachment; the community is self contained and the identity of interest between employer and employee is ever present, particularly if the wage earners can have some share in local self government.

The employees of the General Electric Light Company of Schenectady, N. Y., found great difficulty in obtaining comfortable homes for themselves and families. Those available were poorly located and not in the best sanitary condition—in fact the house and surroundings were generally undesirable. In one instance known to the writer, a young engineer, just married, was offered a fine position with this company at a salary that was perfectly satisfactory. On going to Schenectady to see what arrangements he could make for securing a comfortable home, he found that most of the houses were occupied by the owners themselves. It was impossible to rent a house such as he wanted in a desirable location—in fact the prospect of securing such a home as he desired for his young wife was so unpromising that he decided not to

THE LUDLOW MANUFACTURING COMPANY

LUDLOW, MASSACHUSETTS



ONE OF THE MILLS



THE SCHOOL AND WAGE-EARNERS' COTTAGES



accept the position. This was a loss not only to the company but to the community, the former losing a good engineer and the latter a good citizen.

This company has become so large, with a pay roll of 6000 people, that the decision was forced upon them to undertake the provision of suitable homes for their heads of departments, superintendents, clerks and foremen. They succeeded in purchasing a tract of seventy-nine and one-fourth acres in the north-eastern part of the city, accessible to the trolley running by the property. This tract is beautifully situated on high ground, well timbered, through which a winding stream makes its way. The grove and stream will be utilized by the landscape gardener for a park for the community. It is the company's plan, if this colony proves a success, to secure other tracts and develop them for the rank and file of their men, who may thus be able to buy smaller lots and build inexpensive homes.

LUDLOW.

The property of Ludlow, Mass., was started originally as a small cotton mill in 1824. After more or less success and various changes of ownership, it was finally organized in 1868 under the title of the Ludlow Manufacturing Company.

Of the original mill buildings none remain, the oldest mill now existing having been built in 1878. The mills, shops, engine and boiler rooms contain over fourteen acres of floor space. The warehouses cover six acres of ground, and are connected with the railroad and mills by three miles of tracks and sidings, served by two locomotives.

It has been the aim of the corporation to make the village an attractive place in which to live. Apart from philanthropic motives, they believed that by so doing they would be able to attract and keep permanently a superior class of operatives.

The various cottage plans are the result of several years of careful study and experiment. Each cottage as built has

been planned to remedy some defect in a previous plan, to incorporate some improvement suggested, or to lessen the cost of construction. The tenants have been asked for criticisms and suggestions, which have been acted upon when approved. Different families have different ideas. Some prefer stairs opening from the kitchen, some from a front hall; some wish bathrooms upstairs, others downstairs, etc., etc., hence a variety of plans substantially of the same size and cost.

In planning these houses, the following considerations have been constantly in mind: economy of room; economy in heating; economy of work in care of house and children; largest available amount of sunlight; economy of cost; simple and well proportioned outlines.

The four room half cottage plan has been found very popular for young married couples, and answers their requirements until they have two or three children, when they change to a single five or six room cottage.

When the corporation first bought the property there were but two streets, containing a church, a single room school house and a few old-fashioned tenements. During the last thirty years, the corporation have laid out and built three miles of streets, and have partly constructed a comprehensive scheme for sewage. They have constructed at their own expense the water works, gas works and electric light plant, lighting the village streets without charge. They own the church, school house, masonic hall and all except a few of the houses in the village.

It was originally intended to encourage private ownership of cottages, but after several sales were made it was deemed undesirable, except for small farms outside of the village. While the original purchaser might be satisfactory, the property was liable soon to pass into undesirable hands, and restrictions as to pig pens, hen yards and other nuisances, not having been incorporated in the deeds, could not be en-

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forced, as in the case of the company's cottages. The cottages sold have been bought back as opportunity offered.

Until recently all cottages were supplied with an outside woodshed and privy—making a most unsightly array of sentry boxes through all the back yards of the village. In all the new construction, the shed is attached to the cottage and the privy replaced by a water closet either with or without a full bath room equipment.

SCHOOLS.

In 1878 the village contained one ungraded school with a single teacher. The increase of operatives in 1878 required two additional teachers in temporary quarters in the church vestry. The company then decided to build and own the school house. Accordingly, a school house containing six class rooms, a lecture hall and school parlor was built and rented to the town at the nominal sum of \$100 a year. The management had hoped to introduce instruction in cooking and sewing, but it was not favored by the town school committee. Considerable friction arose between the corporation and the town authorities in regard to the management of the school. Finally the corporation refrained from making any attempts at improvements in the school work, but continued to give the use of the school house, and until within a few years have paid a quarter of the salaries.

The old school house has been outgrown and the corporation expect soon to build a larger new one, remodelling the old one into a club house and institute for their employees. Most perfect harmony now exists between the corporation and the town officers, and it is believed that suggestions in regard to the management of the school would be welcomed.

In 1878 the addition of a large amount of machinery in a country village required the immediate construction of a large number of houses, and the continued growth of the business since has necessitated a steady increase.

COTTAGE BUILDING.

The first houses built were planned by architects more with reference to outside appearance than to meet the conditions required by the people who were to live in them, but of recent years the management have made a careful study of the whole matter, in order to provide, at the least possible cost, cottages which will meet all the requirements.

The result of the first attempts at individual cottages seemed to be failures. The cottages were too expensive and the tenants did not take proper care of them. A number of old-fashioned tenement houses were then built, some with eight tenements to a house. These proved even more unsatisfactory than the single cottages and but few of them were built, another and successful attempt being made to introduce single houses. At the present time no houses are built with more than two tenements, and these only for the sake of securing economy in building four-room tenements, for newly married couples, separate front and rear doors being always provided.

In 1878 the corporation fitted up a few rooms in an old building as a library and reading room, with a small number of carefully selected books. In 1888 a new library was erected as a memorial by the widow and children of the late Treasurer. This library building was given to the town under certain restrictions. At the same time the corporation presented to the town all the books belonging to their library, and have since paid for additions of books as well as all salary and maintenance expenses.

The library now contains 3,660 volumes, and thirty-four magazines are to be found in the reading room. The patronage is fairly satisfactory and is increasing, and the building will probably continue to meet all the requirements of the town.

In order to add to the attractions of the village, in 1892 a hall was built for the local Lodge of Masons. The upper

story was arranged for their sole use and so as to suit all the requirements of the order, while the lower floor was arranged for social gatherings of the Masons and other societies or fraternities in the village. This building has been in constant use and is an unqualified success.

LIBRARY.

When the first library was started in 1878, a room fitted out with various small games was set apart as a smoking room, but it became so disorderly that after several forcible ejections the room was closed. During the succeeding years the general tone of the village improved, and in 1895 the attempt was again made. An unused part of a new mill was fitted with bowling alleys, pool tables and other games. This was in every way successful, but was finally closed, as the space was needed for mill purposes. Provided they can secure the interested cooperation of their employees, the corporation hope soon to establish a permanent and well-equipped club-house and working men's institute.

They also hope that the young men of the village will take such an interest in outdoor games and general athletics, as to warrant the laying out of a field for their use and grounds for match games with neighboring teams.

The corporation have long wished to organize a brass band in the village, and there is now good promise of this being accomplished.

The management have always felt that much good could be accomplished in a manufacturing village by instruction in cooking, and they started such a school under a teacher from the Boston Cooking School. Two classes were formed from among the wives of the overseers and leading men. As nearly all did their own cooking, it was decided to have the classes prepare a regular dinner to which each member could invite one guest, generally the husband. The classes

were fully appreciated, and resulted in better cooking and more sociability.

The advisability of starting a corporation or cooperative store at Ludlow has been discussed several times, but in view of the competition of three stores in the village and easy access to a large city, it was not deemed advisable.

A cooperative store has been suggested by the operatives, but has never been favored by any of their leading men in whom the management placed confidence, and consequently has never received support or encouragement.

In the early history, an attempt was made to interest some of the leading men in becoming stockholders, but it did not prove satisfactory and the shares were bought back by the treasurer. While they believe that profit sharing can be successfully applied in many industries where skilled labor is the great factor, the management are not convinced that it is desirable where almost all the labor consists of unskilled machine tenders, and where the profits depend mainly on successful buying, selling and management, and the perfection of plant and machinery.

THE WESTINGHOUSE AIR BRAKE CO.

The Westinghouse Air Brake Company, of Wilmerding, Penn., where their works are located, purchased a tract of land adjoining the factory. It was their thought to give each employee an opportunity of owning his own house and lot. This tract was divided into lots, which were sold at cost. There was a ready response from the employees. To assist the men still farther, the company undertook to build their houses. By means of large contracts, at cash prices, it was estimated that the employee saved from \$300 to \$500 on his house, the company giving them this extra advantage.

Furthermore, the payment for the house and lot was spread over a term of ten years, or 120 equal monthly

THE WESTINGHOUSE AIR BRAKE COMPANY WILMERDING, PENNSYLVANIA



GENERAL VIEW OF THE INDUSTRIAL TOWN OF WILMERDING



IMPROVED HOUSES FOR THE EMPLOYEES

payments in the nature of rent, based on the purchase price. The monthly payment included interest and life insurance premiums on a policy to clear the property in case of the purchaser's death. On the fulfillment of the above conditions, the company agreed to deed the property free of incumbrance.

The company also agreed, on the payment of 70 per cent. of the original value of the property by the purchaser, to deed the same to him and accept a first mortgage as security for the balance.

The life insurance feature protected both the employer and employee, for the policy was taken out in the name of the company. As the payments ceased at death, the policy cancelled the expense of the house to the company, and the deceased's beneficiaries received the deed free to the property.

Interest at the rate of five per cent. for average time was allowed any one who might desire to anticipate payments, thus encouraging the thrifty. The lots were 40 ft. in width and from 100 to 200 ft. in depth.

The most expensive house with lot cost \$3775, and consisted of a parlor, dining room, kitchen and hall on the ground floor, with four bed rooms and bath upstairs. The lowest price house and lot was \$2100. There is a parlor, dining room and kitchen, with two large bed rooms on the second story.

Seventy-five houses were built in accordance with the plan in 1890, and thirty-six of these are now owned by the original purchasers. The business depression of '92-'93 made it very hard for the payments to be continued, so a modified plan was adopted, by means of which a mortgage was taken on the property at five per cent. a year, with opportunity of reducing the principal in quarterly payments. Up to Dec. 30, 1899, on thirty-six houses, the principal due was \$65,050, but this has been reduced during the same period by

\$6,057, leaving a balance of \$58,993. The smallest reduction of principal was \$70 and the largest \$600.

Altogether the company has 106 single frame houses, renting from \$22 to \$14 a month.

There are twenty-four double houses renting at \$18 a month ; two rows of six houses, each renting at \$16 and \$18 a month, and four blocks of flat houses, each house containing two apartments, or twenty families to a block. The monthly rentals are \$13 and \$14 each, according to location. These flats are adjoining the works, and are very desirable for residences.

Another interesting case of town development appeared in 1886, when the Apollo Iron & Steel Co. obtained control of a plant at Apollo, a small industrial town about forty miles from Pittsburgh. Prudence and good management compelled annual extension, but the firm were always at a disadvantage in that they could not build with a plan. The buildings were old, were too small, so that it was almost useless to put in modern machinery ; however, business grew steadily until the issue was no longer to be dodged, " Shall we re-make Apollo, or shall we begin from the very bottom a new town, which may be planned along lines of the most progressive social and industrial development ? " The latter course was decided on.

In 1895 the new town to be known as Vandergrift consisted of acres of fields and meadows, beautifully situated on the broad sweep of the river, with a background of wooded hills. While the new mills were building it was imperative that homes for the workingmen should also be built, so that, just as soon as the mills were completed and in operation, the force could go to work without the loss of a single day. It was no small undertaking to house comfortably a thousand workingmen and their families. The company displayed wisdom and forethought in planning a town which should have the most improved system of sanitation and pure and

ample water supply, paved streets and concrete sidewalks, gas and electricity.

In the first place the physical basis of the town was planned on lines of natural beauty by Mr. H. L. Olmstead ; accordingly winding streets, a village green or common, frequent open spaces for shrubs and flowers, relieved the stiffness and ugliness of the ordinary town.

A constant water supply was secured by artesian wells on the hills ; a complete system of sewers and drains made the town clean, for cleanliness means health ; the streets were brick paved, the sidewalks concreted and the little triangular spaces were planted with shrubbery. With their splendid water supply there is no need for wells, which are often the cause of malaria and typhoid fever ; in fact there are no wells. Then, too, each house is provided with bath room and water closet, doing away with unsightly outbuildings. Vandergrift is not merely a mill town ; nearly every man owns his own house, and time is devoted to taking care of its people by its people.

The President, Mr. George C. McMurtry, in the course of conversation stated that they already had good men when they began Vandergrift, but they needed more. He knew of no way so sure for getting a steady supply of good men, after giving them work and paying them well, as to help them a little. In his judgment no other help is so wise as giving the men a chance to help themselves. Based on this social and industrial philosophy, residence lots averaging 25 x 125 feet were offered at \$750 to \$1050 for inside, and \$1500 to \$2500 for corner lots. This price was based on the average sales in Apollo from 1890 to 1895. While these prices were high, it must be borne in mind that all improvements, viz., paved streets and sidewalks, water and gas connections and sewer connections made on the very lot are included in the initial cost. The owner, therefore, has no additional expense of assessments for improvements that are needed at uncertain periods and unknown rates, since at Vander-

grift the only additional expense is that of the house. The only restriction which the deed contains is that no liquor shall be sold on the premises for 99 years. This experiment of selling land without restrictions to the employees will be watched with much interest, because it is contrary to the usual practice.

A school with accommodations for 200 pupils was built by the company. A bank with a capital of \$50,000 was organized. A large tract in the center of the town was given for a village green, and a smaller tract for a hospital and a casino. In addition, the company was very liberal in providing for the spiritual and moral needs of the town by giving any religious denomination the land, and by contributing half of \$15,000, which sum was fixed as the minimum cost for construction of the edifice. There are now five churches in Vandergrift.

While the churches provided for a great amount of social intercourse, the company felt the necessity of providing for the larger social needs of the community, especially in the winter season. The casino which is just built, at an expense of \$30,000, contains an auditorium for people, and a stage. In one wing of the building are the library and reading rooms, and in the other, rooms for the local magistrates and court rooms. The ground floor of one wing is used by the fire department.

About twenty miles southeast of Pittsburg in an air line, on Pigeon Creek, an industrial colony is now building by James W. Ellsworth, who has acquired a tract of some twelve thousand acres of coal lands.

The development of the purely commercial side of the enterprise led him to plan for a town or community where the miners might own their own homes; accordingly a tract of between five and six hundred acres has been set aside for this purpose. While the general outlines of the plan are pretty well defined, they are necessarily subject in small respects to the determination of matters of detail, which have

not yet been taken up and settled, and which may to some extent call for modification of the general plan.

The houses, however, will be of brick, one and two story, perfectly plain or colonial in architecture, with about a quarter of an acre of ground, or 75 x 130 feet, with each house. The house and lot will be sold to the miner at cost—taking into consideration life insurance, if desired, the improvement of streets and possibly to some extent other general expenses—or in the neighborhood of seven to eight hundred dollars, price payable as rental at the rate of about twelve dollars per month, with contract (which will also provide that every property owner is to bind himself to allow no liquor or alcoholic drinks to be sold on his property) that if the lessee retains the place for a stipulated period, so the total rental will cover principal and interest at six per cent. of the purchase price, deed is to be given.

If it can be reasonably accomplished, it is the intention to have the contracts provide for a term policy of life insurance on husband or head of the family for such amount as will amply cover deferred payments, so that in case of death prior to the end of the contract period the family or heirs will own the home.

The general plan of the town will be winding streets, macadam roadways twenty feet from curb to curb, four feet for tree planting space, and four feet for gravel walk on either side, or the total width of street thirty-six feet, osage hedge and house set back six feet from the latter, giving room for the planting of perennial plants.

Two churches are to be built, Catholic and Protestant, public school building, with ample provision for night school; club house, containing library, reading room, billiards and bowling alley, for which a small fee will be charged that members may feel a proprietary right, and an athletic field. The hospital and general store are to be managed on the cooperative plan, the profits to be divided among the miners; however, it may be found preferable to rent or sell lots to private mer-

chants. The government of the town or borough is to be in the hands of the property owners.

Mr. Ellsworth states that it is his intention to provide every benefit with which an employee can be supplied. On the other hand, the cost of producing coal must be made as low as it can be made legitimately. He says he believes in those combinations of similar interests which are known as trusts. When these combinations are made on business principles and are honestly administered, the result is a great cheapening of the commodity produced. Then follows what has always followed—introduction of labor-saving devices, demand multiplied by cheapening the cost, and the field of labor widened. Every combination or trust must work for this end, no matter what is the class of business, if it hopes to succeed.

It is a business principle which cannot be disregarded, that to cheapen the cost to the lowest possible fraction, having a due regard for a fair return on capital invested, multiplies the demand, and profits increase with the volume of business. Volume of business is the measure of real success—a small return per ton on a large volume of business. If these combinations, as complained, displace employees, it shows that these employees are no longer necessary in that line and are a tax on the public. Their seeking of new opportunities will open new fields of industry, and a greater measure of prosperity will follow.

THRIFT.

The Ludlow Manufacturing Company, Ludlow, Mass., was instrumental in starting a Savings' Bank under the State law in 1888. Since then they have provided the banking rooms free of expense, and for several years one of their clerks acted as treasurer. For the sake of avoiding criticism, they refrained from being connected in any other way with the management; their master machinist being the only other

representative employee. The bank has been successful in every way. In December the deposits were more than \$100,000.

ASSOCIATION FOR THRIFT.

What might be called the conventional method is the benefit association, where a certain sum is paid in each week or each month by the employee. In some cases a certain sum will be added by the firm, one of their immediate staff having the custody of the funds. It is always better when the organization and administration can be managed by the wage earners.

The penny provident bank, as it is called, is an excellent method for helping the boys and girls to save their pennies, nickels and dimes. The capital of the bank is a certain amount of stamps, in denominations of 1c, 2c, 3c, 5c, 10c, up to \$5. \$20 worth of the stamps is recommended for an initial working capital. The depositors are given a card on which the stamps are posted. At any time the cards are cashed by a return of money equal to the value of the stamps on the card. When the stamps amount to \$5, it is suggested that a savings' bank account should be opened.

The system is equally applicable to adults, although it is more in use among children. By some operatives the penny bank is used to help them set aside small sums for the purchase of a ton or so of coal, rather than a bucket or a sack. It is a splendid system for saving small sums.

In 1892 the Proctor and Gamble Company at Ivorydale, Cincinnati, Ohio, instituted a plan for loaning money to any employee who might wish to purchase the common stock of the company. The company is advised of the intention of the employee, and the stock is bought for him in the open market. A deposit of \$10, at least, is made, and the difference between the cost of the share and the amount he pays is loaned him at four per cent. per annum. He is given two years in which to pay his loan. One hundred of the

employees are stockholders in the company and own over a thousand shares, which at present market value amount to over \$400,000.

A Building Association was incorporated in August, 1887, with an authorized capital of \$500,000. It is conducted by a board of nine directors, all employees of the Proctor and Gamble Co., and elected by the share holders of the Building Association. There are now 450 share holders, 390 of whom are simply depositors, the other sixty being borrowers upon real estate security. Of these sixty, thirty are employees of the company, who are paying for their homes in the association. It is estimated that since the incorporation of the association there have been sixty of the employees of the company that have obtained homes through its agency. There is \$1500 in the reserve fund, as security against contingent losses, of which in the history of this association there have been none. Some of the members of the association, employees of the Proctor and Gamble Co., have as much as \$2000 deposited to their credit. Many others use the association to accumulate savings, in order to pay for stock of the Proctor and Gamble Co., which they have bought and are paying for by installments.

A pension fund, one-half of which is contributed by the company and one-half by the employees, enables any of them disabled by ill health, old age or accident to secure a pension. At present there is only one pensioner, who is unable by reason of disability to earn full wages. The pension fund accordingly pays the difference between the former wages and that which he now receives. In addition to this any shares of profit sharing [dividends refused employees on account of their carelessness, misconduct or lack of interest are turned into the pension fund.

At the Ferris Bros., Newark, N. J., Friday is pay day. By this means the families have the benefits of the Saturday markets, being able to buy with cash instead of on credit.

Among the institutions for promoting thrift are benefit or mutual aid associations. The general principle of them all is the same, with variations necessary to local adaptations ; as a typical association, that of J. H. Williams & Co., Brooklyn, has been selected. This has stood the test of several years, and was founded on the successful daily experience of other associations in factories, railroads and department stores. The strength of this organization has been tested by several cases of very long continued illness, by a number of deaths which happened to come very close together, and by voluntary withdrawals by employees, who have been refunded a portion of the dues which they have paid. In spite of these facts, and that the association has always had sick members to sustain, the funds have steadily increased, and it has been found practicable to engage a regular physician on an annual salary.

To encourage thrift, and to enable their employees to become actively interested in the company, the Illinois Central Railroad offered to obtain for its employees shares of its stock, one at a time, at current market prices, to be paid for in monthly installments in such a manner as will suit their convenience, allowing them interest at the rate of four per cent. per annum on their deposits for such purchases, as well as the option at any time of cancelling their application for the purchase of shares and withdrawing their deposits for the same with accrued interest.

On the first day of each month the company will quote to employees, through the heads of their departments, a price at which their applications will be accepted for the purchase of Illinois Central shares during that month. An employee is offered the privilege of subscribing for one share at a time, payable by installments in sums of \$5 or any multiple of \$5, on the completion of which the company will deliver to him a certificate of the share registered in his name on the books of the company. He can then, if he wishes, begin the purchase of another share on the installment plan. The

certificate of stock is transferable on the company's books, and entitles the owner to such dividends as may be declared by the Board of Directors, and to a vote in their election.

Any officer or employee making payments on this plan will be entitled to receive interest on his deposits, at the rate of four per cent. per annum, during the time he is paying for his share of stock, provided he does not allow twelve consecutive months to elapse without making any payment, at the expiration of which period interest will cease to accrue, and the sum to his credit will be returned to him on application therefor.

Any officer or employee making payments on the foregoing plan, and for any reason desiring to discontinue them, can have his money returned to him with accrued interest, by making application to the head of the department in which he is employed.

An employee who has made application for a share of stock on the installment plan is expected to make the first payment from the first wages which may be due him. Forms are provided for the purpose, on which the subscribing employee authorizes the Local Treasurer in Chicago, or the Local Treasurer in New Orleans, or the Paymaster or the Assistant Paymaster to retain from his wages the amount of installment to be credited monthly to the employee for the purchase of a share of stock.

In case an employee leaves the service of the company from any cause, he must then either pay in full for the share for which he has subscribed and receive a certificate therefor, or take his money with the interest which has accrued.

The foregoing does not preclude the purchase of shares of stock for cash. An employee, who has not already an outstanding application for a share of stock on the installment plan which is not fully paid for, can in any given month make application for a share of stock for cash at the price quoted to employees for that month, and he can in the same month, if he so desires, make application for another

share on the installment plan. Employees who want to purchase more than one share at a time for cash, should address the Vice President in Chicago, who will obtain for them from the New York office a price at which the stock can be purchased. Any employee desiring to purchase stock (except in special purchase of more than one share for cash) should apply to his immediate superior officer, or to one of the local treasurers.

THE PLANT AN OBJECT LESSON.

Industrial betterment has a wider scope than its influence on any particular establishment. Its wider application is the fact that it becomes an object lesson not only for the trade, but for the local community and the city. A factory where sympathy is the practice between employer and employee becomes talked about ; it is known that the men are kindly treated there ; workers want employment in that kind of a factory. Instinctively a high standard is set up, and a reputation is established for a kind of industrial Utopia. Illustrating concretely :—at the National Cash Register Company, where so much has been done to decorate the factory grounds and buildings with vines and flowers, the employees, by example and precept, have been permeated by the desirability of natural beauty. Accordingly, each employee living in districts away from the factory has become a kind of missionary, preaching and applying the principles of vine and flower beauty to his own home. Thus the city gains. A city fire engine department, about half a mile from the factory, planted flowers around their building. The owner of a factory cleaned up his premises, painted out the hideous advertisement on his fences and contributed to good citizenship by making his factory remarkable for its neatness rather than its ugliness.

Whatever promotes better feelings between capital and labor is a positive social asset. The influence of kindly

treatment becomes known in a community, almost as widely as tyrannous or oppressive acts.

At the above establishment there are guides employed for the express purpose of showing people about the factory. The social work is sure to appeal to even the most indifferent, and reflection certainly will deepen the casual impression.

It became known to the factory people that a certain part of South Park near the factory was to be improved by cutting down a knoll. The removal of this knoll would have meant the destruction of several fine old oak trees. When these facts became known to the factory people they instantly realized that the destruction of these trees, which had been old landmarks, would be an irreparable loss to the beauty of the park. Hastily assembling in a mass meeting one noon, they presented their collective protests so successfully that the Park Commissioners rescinded their order, thus saving the trees for the city. This concerted action would never have been possible if the people had not been educated to a sense of appreciation of landscape effects.

Adjoining the factory neighborhood was a district near Rubicon Creek, rather unattractive in appearance, with no advantages of clubs, kindergartens and classes for the children. It was Mr. Patterson's idea to improve this part of the city in the same way as the factory grounds. The first step was to dignify the suburb by a new name—Rubicon. Two cottage buildings were moved there and became a centre of usefulness. Graded streets, cement and cinder sidewalks, the laying out and beautifying of lots, planting of trees, shrubs and vines, kindergartens for the children, culture clubs for the boys and girls, improvement and outdoor art associations were started. June 3rd, 1899, the people of the neighborhood were invited to a lawn party in the grove belonging to the old homestead of the Pattersons. One part of the program were illustrations by means of lantern slides showing what other communities had ac-

complished for local improvement, and presenting simple suggestions for carrying out similar plans for Rubicon. During the summer the Patterson homestead grounds were open to the children of Rubicon, South Park and Oakwood. Three hundred and twenty-five children were enrolled under the instruction of four teachers and four assistants, who maintained classes in clay modeling, painting and charcoal drawing, sewing and nature study. The boys enjoyed tugs of war, quoits, baseball, foot races, flag races and all out door sports.

COMMUNAL INFLUENCE.

Among the best illustrations of the communal influence of a movement for industrial betterment is that of the Peace Dale Manufacturing Co., whose business can be traced back to the early part of the century. Peace Dale is a village of about 1500 inhabitants in Rhode Island. The various village organizations are not in the formal control of the company, but in nearly every instance they have been started and maintained by the members of the corporation.

The fact that the stockholders of the corporation have always lived there and have been a part of the village life itself, has been a useful factor in the growth of the place.

As early as 1854, the village children were taught singing in the village school on a week-day afternoon, and gathered into a Sunday School on Sunday by one of the owners and his wife. In 1856 a large building was put up, with accommodation for the library founded two years earlier, a reading room, and a hall in which a church was organized. These rooms were used until 1872, when the church was built, and till 1891, when the library was moved to its present quarters. Most of the organizations named below are thus village, rather than company matters, but at the same time the company, its owners, and employees, practically make up the village.

The Hazard Memorial harbors most of these organizations, containing a library of about seven thousand volumes, a hall seating six hundred people, several class-rooms and a gymnasium. The building, of stone and wood, is an important part of the village architecture, and cost about \$50,000. The building was erected in 1891 to the memory of Rowland Gibson Hazard.

The library is maintained in the interest of the whole town, and is managed by a board of directors that represent the different villages. It is used principally by Peace Dale and Wakefield, and in the summer is drawn upon by Narragansett Pier and other near-by summer resorts. It is entirely free. It has not only the library proper, but a reading room, which is open during the season until eight o'clock every night. The library is supported by funds that have been given to it from time to time, and contributions from various interested people. The town has within the past year for the first time made an appropriation for books.

The Choral Society was organized some ten years ago, and has grown to be one of the leading features of Peace Dale. A conductor comes from Providence once a week during the season for the chorus of seventy-five to one hundred voices, who make up the membership of the society. They give three concerts each year, and have done some very good work, as "The Elijah" a few years ago, Rossini's "Stabat Mater," and several other things of a similar rank, including "The Creation" and Sullivan's "Golden Legend." This Choral Society has not only helped the village in itself, by giving concerts and affording the singers of the place an opportunity, but it has an indirect value in developing the local musical talent, as shown in an excellent church choir, and especially in what are called the Sunday Musics.

The Choral Society is formally organized, the members paying three dollars each per annum. There is an admission fee to the concerts, but the whole sum realized from these

sources is not sufficient to carry on the work, and the deficiency is made up by the owners of the mill property.

A few years ago the Sunday musics were begun by Miss Hazard and her sister, who went into the hall on a Sunday afternoon and played and sang for fifteen or twenty minutes, while a few people from the outside straggled in. From that, it has grown to be an informal concert each Sunday afternoon for the season, from November until Easter. The various Sundays during the time are allotted to musical people in the village and town, each one providing a programme that will take from half an hour to an hour. The music is not wholly sacred, but it is attractive to the people of the village and town, who come in large numbers, and the hall very frequently contains from 250 to 600 on a pleasant Sunday afternoon. The musicians are almost entirely local, though once in a while there is some first-class performer from the outside. There is no organization, and no charge of any sort connected with this work.

The Sewing Society has two rooms upstairs in the building, and meets every Saturday afternoon during the fall, winter and spring. This also is without formal organization, and is carried on by the wife of the President of the company and a number of other ladies in the village. The girls are divided into classes and are taught the practical art of sewing. Twice a year the hundred pupils are given a little spread and a frolic.

The Boys' Room was started some five years ago, and is a very simple affair. The membership is confined to boys under sixteen nominally, although there are a few over that age who came in several years ago, and have continued to come. The boys are the village boys, mostly the sons of mill operatives. They come at half-past seven o'clock Friday evenings, and stay until nine o'clock. They are divided into two parts, and sent down, one part at a time, to the gymnasium, where they are instructed and led in gymnastics by some competent person. The other part is

kept in the rooms above, where there are games and reading matter, and a few are drawn into classes in arithmetic, sometimes in stenography, or in any study in which sufficient interest is shown to gather a class. It is the idea of the club that the boys may be helped by association with refined and orderly methods. Eight or ten people come regularly to help carry on the work. There is no charge of any sort in connection with this organization. At the end of the year the boys are treated to ice-cream and cake and a general good time.

There are also in the building some special classes in manual training. One class in carpentry numbers from eight to ten boys, who are mostly sons of mill operatives. They are furnished with tools by the Trustees of the hall, and charged five cents a lesson to cover the cost of material. The instructor is a village carpenter of unusual skill, who gives his time. In the basement of the Memorial Hall there are a gymnasium, several bath rooms, and a smoking room. These are appropriated by the Athletic Association, which consists of some thirty or forty young men who each pay two dollars and a half per annum for the privilege of using the apparatus and the bath rooms, the money being applied toward the expense of maintaining the gymnasium. Any deficiencies are made up by the Trustees of the hall. The work is under the care of the superintendent of the Memorial Building, who collects dues and maintains order.

The village supports a Literary Society, which meets every two weeks during the season, from October to May. It is regularly organized, and was begun a good many years ago. The entertainments are not wholly of a literary character, consisting of lectures, concerts, and dramatic performances, but are largely contributed by local talent. One concert of the Choral Society is included as a regular number in the Literary Society's course. One night a year is given up to issuing a number of the South County Magazine, which is rather a unique production of this society. Though called

NATIONAL CASH REGISTER COMPANY

DAYTON, OHIO, U. S. A.

PLAYGROUND FOR EMPLOYEES' CHILDREN.



Summer Outings.

The playground in Rubicon, under the direction of the N. C. R. Co. and members of the Kindergarten Association, is the latest effort for neighborhood improvement. All boys and girls under thirteen years of age residing in South Park, Rubicon and Oakwood are permitted to enjoy it. Two hundred and twenty-five children are enrolled.

The playground is a part of the old Patterson homestead. It contains hills, a ravine, a spring and small stream and an abundance of shade trees, is provided with swings, hammocks, croquet sets, quoits, volley-ball, vaulting and jumping apparatus, and is under the care of experienced kindergarten teachers. Reading, sketching and nature-study classes are among the instructive features.

a magazine, it is a manuscript, and is simply read, and illustrated by living pictures and drawings. The membership consists of all those who buy season tickets, the charge amounting to about ten cents per night.

In the Memorial Hall several local circles of the King's Daughters, branches of the regular organization of that name, hold their meetings. About one hundred and fifty women and girls belong to these circles, and sewing, both making and mending garments, and knitting, etc., is done. One circle owns a sick room outfit, bedside table, rolling chair, and other articles of use in sickness, which are loaned as occasion requires.

The hall in the Memorial Building is for the general use of the people of the village, but is not let to any traveling show or organization, or for entertainments that are not considered by the Trustees to be for the better interests of the village. The rental to such people as can hire it is nominal. It is also used for fairs and concerts for special town purposes.

In the village is another building containing a reading room, which is regularly organized and is patronized by the young men entirely. This club is called the Peace Dale Reading Association. The dues are about two dollars a year, which go toward buying newspapers and periodicals. Any deficit is made up by the President of the Peace Dale Mfg. Co. A room and lighting are furnished them free of charge for meetings at all times, smoking, playing cards, or entertainments.

The Peace Dale Manufacturing Company inaugurated, a number of years ago, a system of profit sharing with the employees. The only other general work in this line that the Peace Dale Company undertakes is the cultivation of a spirit of fairness and just dealing with its employees, and making the tenements and the village generally as attractive, pleasant, and healthful as possible.

The owners of the property think that the efforts which they have made, extending now over a long series of years, have aided in bringing about a cordial feeling among all parties who work for the company, and in raising the general morale of the village. Certainly Peace Dale has a body of very efficient and steady help, and the changes among the employees are small. A number of families have been here for several generations, and the company has never experienced any serious labor difficulties.

THE DRAPER CO.

Fourteen houses were built four years ago on a tract of about thirty acres of unimproved pasture land, which was laid out by Warren H. Manning, landscape gardener, the layout being for the entire piece of land. A loop road was laid out and built by the town.

The houses were all built on the oval enclosed by the road, giving opportunity to build the same number of houses on the opposite side of the street whenever the company was ready, without any extra charge as far as either roads, sewers or water supply is concerned. These houses, as well as all others owned by the company, are supplied with water furnished by the local water company, a private enterprise.

The sewer system is constructed, managed and paid for entirely by the company. Where the sewer passes buildings owned by other parties, they have always been permitted to connect with it by paying what represents an actual pro rata share of the cost.

Returning to the lot of fourteen double houses : the road built by the town was constructed in the most thorough manner ; macadamized, curbed, paved and concrete sidewalks put in. The land where the houses stand was entirely re-graded, and these buildings represent an investment, outside of the value of the land itself, but including cellars

and other expenses, of from \$4,000 to \$4,500 for each double tenement.

At the end of the oval piece of land, where there was opportunity to obtain a back yard view in approaching the oval road, a small planting of quick growing shrubs and trees was put in, which has already made a good screen, fully answering the purpose intended.

These tenements are rented on the basis of three dollars per week per tenement; that is, six dollars for a double house, the company paying from this amount the amount charged for water by the water company. In such houses as are provided with furnaces, there is an additional charge of fifty cents per week to cover this expense. Each house contains about the same quantity of room, although the interior designs are quite different. There is a parlor or living room, with good-sized hall, in nearly all cases being connected with the living room by a wide sliding-door.

There are also dining-room, kitchen and good sized pantry on first floor, these last three rooms having hard wood floors. On the next story there are three sleeping-rooms and bath room for each tenement. There is a good sized store room in attic, and the cellar is thoroughly drained and cemented.

At the rear of the house, each tenement is provided with clothes reel and garbage can, and special attention is called to the fact that these back yards are as well kept by the tenants as the front yards. The garbage cans through the season are taken care of at the expense of the company. Through the winter, ashes are placed in a pile where convenient and carted away by the company in the spring. The houses are all built of wood, and nearly all of them contain two tenements each, the division being made vertically through the center.

In regard to class of tenants occupying the settlement there is no classification, except that as these are among the best, they are not let to tenants who seem likely to be un-

desirable, but they contain people working in various parts of the premises, office or other parts of the work, who as a matter of course are people earning more than the average amount of wages, as otherwise they could not afford to live in these houses.

The church was completed about one year ago, and was built by Messrs. George A. and Eben S. Draper, of the company, as a memorial to their father and mother, the late George and Hannah B. Draper, who were among the old residents. This church was presented to the parish by the Messrs. Draper.

The Town Hall was built by the late George Draper, but was not quite completed at the time of his death. It was his intention to present it to the town, and when completed it was given to the town by his children. This building contains the usual town hall, which is provided with stage and scenery, so that it can be used for dramatic entertainments and other matters of local interest. In the first story is located the post office, and up to within a short time the town library. There are also rooms for town officials, caucus hall, store and a market. This building cost nearly \$40,000.

The High School building was built within a year or so after the town of Hopedale was set off from Milford, it being thought that, although a small town, it could provide better High School accommodations than to pay tuition to another town. This building was built by the local corporation and donated to the town. It is constructed of wood, well lighted and with good appliances throughout, and including furnishing cost fully \$7000 above the land. The town in this case furnished the land only.

The Town Library was dedicated December 1899. This building cost \$20,000 to \$25,000, and was built and given to the town by Mr. Joseph B. Bancroft as a memorial to his wife, the late Silvia W. Bancroft. It is a beautiful building

NATIONAL CASH REGISTER COMPANY

DAYTON, OHIO, U. S. A.

PRACTICAL RESULTS IN HOUSE AND YARD DECORATION BY EMPLOYEES,
UNDER THE COMPANY'S DIRECTION.



A Back Yard in Spring.



The Same Yard and Its Decorator, Thirteen Years Old,
Winner of a Prize for Best-Kept Back Yards.



Back Yards of Employees' Houses, Opposite the Factory.



The Raw Material.



The Finished Product.

in every respect, and contains all the most improved appliances for library and reading room.

WHAT MORE THAN WAGES.

In modern business there is little room for sentiment ; the ordinary employer demands a cash equivalent for each dollar paid out. The situation is reflected by the commercial proverb, "Business is business." But here and there employers are beginning to realize that investment in manhood pays ; that improved men for improved machines have economic value, because a more vigorous man can do more work, a more intelligent man will do more intelligent work and a more conscientious man will do more conscientious work.

"I want machines so simple in their operation that any fool can run them," remarked an employer the other day. The fool machines may be run by the fool workman, but the employer will have the monopoly of the folly of such an industrial policy. Improved machines demand improved men to run them.

"What more than wages" is an industrial question that is being asked by men, some of whom feel that the labor share of their wealth production should have a larger reward than the mere payment of wages ; other employers are sufficiently far-sighted to recognize that whatever makes the worker more human, more contented, more skilled, is a positive industrial asset in the business and is a large factor in industrial stability.

Unfortunately a lack of sympathy too often prevails, especially towards the rank and file—"hands," as they are called. In an industrial community, word was brought to the local clergyman that one of the workmen had been severely hurt. The clergyman jumped on his wheel, hurrying to see if there was anything which he could do. On his way, he met the owner of the mills, who asked him where he was going in such haste. On learning that he was bound for his own

works to render what service he could to the injured man, the owner remarked, "Oh pshaw! there is no need of your doing that; he is only a damned puddler!" As long as any employer regards any one of his employees as so much trash, not recognizing that the workman possesses like sensibilities as himself, as long as the employer lacks sympathy, as long as he fails to acknowledge certain inalienable rights, just so long will this condition of injustice lead to bitterness and indifferent work, all of which tend to widen the breach between capital and labor.

When there is sympathy on the part of the employer, and its realization on the part of the employee, their interests become identical, and they show it by the response that they give. In a New England department store the work began at 8:30 A. M. and closed at 5:30 P. M. It was the custom of other firms to begin at nine and close at six, the half hour before nine o'clock bringing very little trade and the half hour before six a fairly steady flow. This firm believed in the identity of interest and showed their sympathy in a great variety of ways, believing that the more closely they could manage their business on democratic lines, the greater would be their success. A meeting of the employees was called, and the question of changing the hours was left to their decision. Bear in mind that the half hour before six was very highly valued by the women and girls, as it gave them opportunity for comfortably preparing for home before the rush on trains and cars, and evening entertainments. Although they realized what closing at six would mean to them, several said at the meeting that they did not want their firm to lose the half hour's business, which otherwise would go to rival stores. When the vote was taken it was found that a decided majority were in favor of closing at six.

The New Industrialism has for its guiding principle, Prosperity Sharing. One captain of industry believing in this principle writes me, "What I have done I planned, not on the basis of charity or philanthropy, but on the principle that

what my employees received was their rightful share, and when they were in my works they made full and ample return. I am therefore sharing the prosperity of my business with those who have helped me make it." Another employer said to me, "My employees have done a large share in producing my wealth, and I owe them some recognition of that act."

Prosperity sharing, therefore, provides for the all round development of the worker, not only providing him with hygienic and comfortable workrooms and surroundings, but through education, recreation, making him a better member of the community, a more intelligent citizen and a stronger supporter of the Commonwealth.

Not from the churches, not from the universities and colleges, not from the common schools, but from the hands of the great captains of industry who are recognizing and providing for the all round development, the character of the plain people is being moulded and shaped along lines of civic and social usefulness. Never before in the history of the world has the employer had such colossal opportunities for guiding and uplifting the thousands of men and women, who spend at least a third of each working day in his employ. If employers realized that they held within their grasp the possibilities of industrial contentment, social stability and communal welfare, they would plan and scheme how to improve the conditions of their employees with the same zeal as they now devote to promoting the efficiency of their business, extending its operations and reaching out for the acquisition of new commercial territory.

Granted a desire on the part of an employer to do something to improve the conditions under which his people work or live, how shall he get the necessary information? He wants to do something, but does not know how much it will cost him, is afraid that he will not succeed, that his efforts will not be appreciated, and that once the start is made he will need some one to help him keep it going. All these

queries are natural, and the difficulties that accompany them have effectually prevented many an effort for industrial betterment.

The League for Social Service in New York is collecting photographs, diagrams, reports, documents, whatever is being done by employers for employees. Accordingly when the president of a large iron company wrote to inquire regarding the provision of open air baths and swimming pools for his miners, this organization sent him photographs of swimming pools, referred him to those who were managing them, so that he might get the very latest details as to the cost of administration and operating, and sent him a report covering the general subject of public baths. If he had desired, the society could have sent a representative to study the situation at original sources and then give him expert advice on every phase of the subject. It is practically a great clearing house of all kinds of facts and movements for improving industrial conditions.

An employer doing a business of half a million asked the writer if he could commend to him any young man or woman, preferably some one just graduated from college, hence of trained intelligence, who could go into his establishment with the status of a social secretary, for purpose of advising, by personal contact with the working staff, so that the employees could be made of more value to themselves in the first instance, and to their employer in the second. Last spring the writer was asked if he would entertain a proposition to go with a large concern, about to start a plant in the suburbs of a large city. The firm wished some one to take the general oversight and planning of all kinds of movements that would tend to improve the conditions of their employees, in education, recreation, sanitation, and so on.

After an inspection of a plant where nearly 4,000 men are employed, the Superintendent asked for suggestions looking toward industrial betterment. I gave him several that were

perfectly obvious. "Why," he replied, "we can't give the time to following up those points. We are too busy; we must do our own work." "Of course you are too busy," I said, "and for that very reason you need some one on your staff whose sole business will be the planning and direction of movements to improve industrial conditions; in other words you need a social engineer." Social engineering is a new profession.

Does it pay? is a question sure to be asked by every employer, and by pay he means an equivalent in dollars and cents, quite independent of any satisfaction that he is doing his duty, in the fulfilment of moral obligations to his employees. On this point, moralization and speculation are futile. Sentiment weighs but little with the business man; what he wants are the cold facts on which he can base his own deductions.

The Cleveland Hardware Co., testified, January, 1900:

"Although we believe that what we are doing is most practical and philanthropic, our company does not feel that it is a philanthropy, but a good business proposition. We believe that the manufacturing plant of the future will not be designed without arrangements being made for club rooms, dining rooms, bath rooms, and similar conveniences, for its employees, and we are contemplating putting in all of these ourselves, for we realize that the cooperation and good will of our employees is money in the company's pocket."

In response to the question, Does industrial betterment pay? Mr. John H. Patterson writes, May 3, 1900:

"What many of my business associates have characterized as sentimental—namely, baths in the factory, prizes for suggestions, landscape gardening, pleasant Sunday afternoons, lunches for the girls in the office, boys' gardens, and our various clubs—cost us about \$30,000, or three per cent. of our annual pay roll, \$1,000,000.

"We buy physical and mental labor. If it pays to take care of a good animal that only returns physical work, how much more important is it for the employer to take care of the employee returning both physical and mental labor.

When well known and successful firms such as these testify that Industrial Betterment does pay, should not unbelieving firms make a careful study of the situation from the view point of good business forethought. It is my conviction, based on observation and a knowledge of the facts, that the trend of the new industrialism is creating new economic and social environments, so that every firm will be obliged in self-defense to bring itself in line with this forward movement. The hardy pioneers in Industrial Betterment, who had the courage of their convictions and the perseverance to carry out their plans in spite of the criticism of their associates and the opposition of their friends, richly deserve the splendid success that attended their new economic policy.

As very little literature in book form exists on the subject of industrial betterment, the information has been secured from personal visits, correspondence with superintendents, general managers, individuals of firms, references to the files of the daily press, occasional magazine articles, and publications which have been issued by employers for their own staff. "A Dividend to Labor," by Nicholas P. Gilman, contains chapters summarizing many American movements for industrial betterment.



DEPARTMENT OF SOCIAL ECONOMY
FOR THE
UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1900

MONOGRAPHS
ON
AMERICAN SOCIAL ECONOMICS

EDITOR
HERBERT B. ADAMS
Professor of American History in Johns Hopkins University

ASSOCIATE EDITOR
RICHARD WATERMAN JR

XVII



Young Men's Christian Associations of
North America

BY
H. S. NINDE
A Secretary of the International Committee of the Young Men's Christian Associations

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BY THE LEAGUE FOR SOCIAL SERVICE, NEW YORK





ROBERT R. MCBURNEY

1837-1898

GENERAL SECRETARY NEW YORK CITY ASSOCIATION, 1862-1898
MEMBER AMERICAN INTERNATIONAL COMMITTEE, 1866-1898
AMERICAN DELEGATE TO WORLD'S CONFERENCE, 1878-1898

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SCENE AT CAMP ALGER, WASHINGTON
ASSOCIATION TENT NO. 7 IN THE FOREGROUND



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A TYPICAL ASSOCIATION HOME
 CLEVELAND, OHIO





THE YOUNG MEN'S CHRISTIAN ASSOCIATIONS OF NORTH AMERICA

INTRODUCTORY PERIOD (1851-1866)

The Young men's Christian associations in the United States and Canada are an outgrowth of the London society of the same name founded in 1844. The first organizations were effected at Montreal and Boston, the former on the 9th and the latter on the 29th of December, 1851. Nothing was known of the Montreal work in the United States for more than two years. The Boston association, however, soon gained publicity through the press, and copies of its constitution coming into the hands of young men in Buffalo, Washington, New York and Baltimore led to similar organizations in those places during 1852, and in many other cities during the year following.

The first effort toward affiliating these scattered societies came from Washington. The project was started during the summer of 1852, but it was nearly two years later that the first delegated gathering met in Buffalo, June 7, 1854, the year preceding the first world's conference, at Paris, and just 10 years and a day from the founding of the parent society in London. The call had been sent out to 32 associations; 19 were represented by 37 delegates, one of whom represented the two Canadian associations at Montreal and Toronto. The business proceedings culminated in the passage of a series of resolutions recommending a voluntary confederation to be composed of such societies as should ratify the agreement, and providing for a stated convention and a central committee. No legislative functions whatever were allowed, the local societies being left independent in every respect. February 20, 1855, the central committee issued a circular announcing the ratification of the resolutions by two

thirds of the associations, thus formally bringing into existence the Young men's Christian confederation of the United States and British Provinces.

During the next six years there was a gradual growth in the number of organizations. Conventions were annually held; communication both by correspondence and visitation was maintained with the associations of other lands, and there was a commendable activity among the home societies. There was little uniformity in methods, and much that was crude from the present standpoint; yet in the larger cities there was a real work for young men and practical experience was solving many problems and determining principles that later were to dominate the entire work.

At Paris, August 20, 1855, occurred the first world's conference under the name *Conference universelle des unions Chretiennes de jeunes gens*. The secretary of the American committee, through whose efforts chiefly the confederation had been established, was actively instrumental in bringing about the Paris meeting. He also suggested the system of international correspondence adopted by the conference. An American delegate presented a series of resolutions looking toward a union of the associations of all lands, and which led to the adoption of the historic Paris basis.* The American associations have continued to take a deep interest in these conferences, have for many years sent large delegations to attend them, and cooperated earnestly in establishing the present world's committee. At New Orleans, April 11-16, 1860, occurred the final gathering of the so-called American confederation. The attendance was large and many representative men were present. Nothing in the proceedings foreshadowed the coming dissolution, but one year from the day on which the convention assembled the first gun of the civil war was fired and the exigencies of that conflict made it im-

*See "Paris declaration," page 26.

practicable to hold a general convention either that year or the next. A special convention of the northern associations, however, was called to meet in New York city, November 14, 1861, to consider systematic Christian effort in the army. At this meeting the United States Christian commission was formed, an organization unique in the history of warfare — ministering to both the physical and spiritual needs of men. Receiving the cooperation of the general public it sent out during the war (1861-1865) 5000 Christian helpers to the camps and hospitals and distributed over \$5,000,000 in money and stores. The southern associations did much in the same direction but not in any such organized form. Inevitably the associations were seriously affected by the war; the young men in great numbers entered the armies and such organizations as did not disband, neglecting the home field, gave their effort chiefly to army work.

In the spring of 1863 the central committee, then located at Philadelphia, issued a call for a general convention to meet at Chicago in June. The war had practically broken up the old confederation and notices were sent to all known associations in the northern states and Canada. The sessions of the convention were occupied mainly with the work of the Christian commission. A series of resolutions, however, directed attention to the greatly neglected home field and led to the presentation of a strong paper on work for young men at the Boston convention the following year. At the Philadelphia convention, in 1865, direct work for young men was taken up in a series of practical topics, a part of the last evening session being devoted to that discussion. This was the beginning of what soon became the leading feature of these gatherings. But the Albany convention of 1866 marked a new epoch. An annual day of prayer was recommended — since recognized by a world-wide observance; the calling of state and provincial conventions was provided for — the first step in that system of auxiliary supervision now covering the continent; the execu-

tive committee was located in New York city, where it has since remained; work by and for young men was so forcibly insisted upon as the one distinctive purpose of the organization that this principle has since dominated the work.

DEVELOPMENT OF THE WORK (1867-1899)

I General organisation

The general organization consisting from 1854 of the confederation and its central committee was modified and strengthened by the action at Chicago in 1863. The conventions continued to meet annually till 1877, when they were made biennial. The individual associations have always been entitled to direct representation in the convention. Since 1869 this has been based on the active membership. Since 1866 the executive committee — incorporated in 1883 as the International committee of Young men's Christian associations — has had its headquarters with a working quorum in New York city. The committee is composed of 45 members, leading business men representing all parts of the continent. The act of incorporation created a self-perpetuating board of 15 trustees to hold all endowments and real property coming to the committee. The committee is further strengthened by an advisory board and by a corresponding member in each state, province or group of its North American constituency and in many foreign countries.

The first employed agent of the committee was engaged for specific work in the west in 1868. Late in the following year the present general secretary was secured. The international force has been increased with the exigencies of the growing work till the list of field and office secretaries now numbers 56, of whom 18 are in the work abroad. Many of these men have by long and careful service become experts in their several departments and have been important factors in promoting and directing the American work. The scope of the

international committee's work as it stands to-day may be outlined as follows:

1 Supervision and extension: a) of the entire American field; b) of departmental fields such as the college and railroad work; c) of work in foreign lands.

2 Secretarial: securing and recommending trained officers.

3 Buildings: advising regarding location, plan of construction and business management of association buildings.

4 Finance: securing funds in aid of state and local fields in emergencies and for its own work.

5 Conventions: arranging the international meetings, aiding state and departmental conventions and sending representatives to all.

6 Correspondence: many hundred thousand letters and circulars are sent out and received annually.

7 Publications: the present list comprises several hundred pamphlets and books.

8 The week of prayer is observed annually through the systematic effort of the committee.

9 In time of special public calamity the committee often acts as an agent — cooperating with the local associations — in receiving and dispensing contributions for the relief of young men.

Supplemental to and patterned after the international are the state and provincial organizations. They had their origin in a resolution of the Albany convention (1866). Four conventions were held the first year with such results as brought them into general favor. Systematic organization soon followed in the form of an executive committee or an incorporated state association. In 1871 the first employed agent of a state committee was put in the field in Pennsylvania. There are now 34 of these organizations in which 49 states and provinces participate; their executive committees number 770 members, with some 52 traveling and office secretaries. The 1899 Year

book reported 31 state and provincial conventions in which 969 associations were represented by over 6000 delegates. Many states are subdivided into districts, each of which has its executive committee and an annual conference. In several states there are county organizations with traveling secretaries and systematic work for young men in the smaller towns and country districts. Many of the states have a system of corresponding members representing sections where no associations exist, and who stimulate work for young men and often bring those removing to larger towns into affiliation with the association through letters of introduction.

It is generally conceded that the finances of the international and state organizations are economically and judiciously administered. The annual expenditures of the former have grown from less than \$600, reported to the convention of 1866, to \$163,773, reported to that of 1899, exclusive of \$28,872 for the foreign work. The expenditures the same year for state and provincial work were \$133,310, and 959 local associations reported cash paid out for current expenses, \$2,453,778.

The Paris basis of 1855 was ratified the following year by the Montreal convention. But although the American associations as a body were eminently evangelical in spirit and in practice, the so-called "evangelical test"* was not adopted till 1869. This action brought the associations into still closer relations with the great mass of American Christians. The loyalty of the organization to the church has never been seriously questioned. That it is an interdenominational body occupying a position *auxiliary* to the church, which has a prior claim on the sympathies and efforts of its members, has been not only affirmed and reaffirmed at the conventions but practically illustrated in the work itself.

The first association building was erected in Chicago in 1867. During the following 10 years 22 more were added, including

*See "Portland resolutions," page 26.



MONTREAL



BOSTON

BUILDINGS OF THE FIRST TWO NORTH AMERICAN ASSOCIATIONS





SCRANTON, PA.



DAYTON, OHIO
TWO BUILDINGS TO BE ERECTED IN 1900



one in New York costing nearly \$500,000 and so adapted to the work as to be really the first distinctive association home. The era of more rapid building development, however, began about 1884. During the year 1899 nearly 40 buildings were erected, some of them as additions to or to take the place of former structures, and nearly as many more buildings are assured for the present year. Among the later buildings are many fine structures, comparing well with other public buildings in their respective towns and thoroughly adapted to the requirements of the work. The typical association home has an attractive entrance leading to a central reception room in which are the business offices and through which only there is access to the various rooms and departments. These consist of reading room, library, parlors, amusement room, rooms for officers, sometimes both a large and a small assembly room, educational class rooms, physical department, including gymnasium, bowling alleys, baths and dressing rooms, apartments for boys' work, kitchen and janitor's quarters. Most buildings for the city associations are so constructed that some part, usually the ground floor, may be rented out. Recently it has become customary to provide dormitories for young men in the upper stories of the buildings. There are now nearly 400 buildings, valued at more than \$20,000,000.

The associations in a few large cities always employed a supervisory officer at the rooms, but the number did not begin to increase rapidly till about 1871. In this year some 12 or 15 of these officers met together and organized the Association of general secretaries. At the sessions of this organization which were held each year, till they were made biennial in 1898, papers have been read followed by thorough discussions of every phase of the qualifications and work of the general secretary, and later of the physical director and other employed officers. For many years these meetings offered the best opportunity for receiving instruction concerning the work. As the number of employed men increased these secretarial con-

ferences were organized in connection with the different states or groups of states. The present number of employed officers is 1275, and the organization of new associations, except in the smaller towns, is not encouraged unless provision be made for salaried supervision.

The growing need of men with a more thorough and technical preparation for the work has led to the establishment of two training schools, one at Springfield, Mass., in 1885, and a second at Chicago, in 1890. The former has secured spacious and attractive grounds in a suburban quarter and has erected suitable buildings for its work; the latter is advantageously located in the new building of the Chicago association, and has grounds and buildings for a summer school on a beautiful lake within easy reach of the same city. The students of both these schools receive not only theoretical, but practical training in every branch of the work.

The international committee soon after its removal to New York, in 1866, began to issue occasional pamphlets giving helpful information about the organization and its methods. Its list of publications now covers every phase of the various departments, includes a hand book of 500 pages, which is used as a text-book in the training schools, many excellent courses of Bible study, and three periodicals — *Association men* and *The intercollegian*, published monthly, and the *Foreign mail*, a small quarterly — representing respectively the general work and the student and foreign mission departments. The *Year book*, made up from carefully gathered statistics with reports of officers and corresponding members, has become a considerable volume, and the published proceedings of the international and state conventions are filled with practical papers and discussions relating to association work.

During the early period of the organization the number of associations and the membership fluctuated greatly, but of late years the advance in the number of organizations and membership has been on the whole conservative but steady, show-



GYMNASIUM



DORMITORY

**BUILDINGS OF SECRETARIAL TRAINING SCHOOL
SPRINGFIELD, MASS.**





**THE SECRETARIAL INSTITUTE AND TRAINING SCHOOL OF YOUNG MEN'S
CHRISTIAN ASSOCIATIONS**


**COMPLETE COURSES FOR SECRETARIES, PHYSICAL DIRECTORS AND EDUCATIONAL DIRECTORS
IN CHICAGO. SUMMER SESSIONS AT LAKE GENEVA, WISCONSIN**



through the Bible study department of the international committee to unify and raise the standard of Bible work through uniform graded courses covering a series of years and adapted to the different lines of study employed by the associations.

Educational agencies have been in use from the beginning, but, in 1892, an international secretary was placed in charge of this department, since which time there has been a substantial and most encouraging growth. Nearly 1000 reading rooms, supplied with the best periodicals, and 800 libraries with a half million volumes, serve to attract and develop young men. Lectures and practical talks in their various forms are well utilized, more than 5000 being reported the past year. Two hundred associations conduct literary societies. Congresses, topic clubs and various other forms of educational society work are reported in increasing numbers and quality each year. The most substantial growth has occurred in the educational class work, which is now conducted in 350 associations and has developed into a strong unified movement for standard evening school work in which each season 1200 teachers give instruction to 25,000 different young men. Fifty subjects are taught, in half of which there are standard courses of study outlined by an international board of examiners. The high standard of these courses is maintained by annual examinations of a rigorous character. Many colleges of North America are in sympathetic and cooperative relations with this movement, so that when a student finishes one of the association courses his certificate is accepted at its face value in lieu of the entrance examination. Several associations have recently received gifts and special endowments for the development of this particular work, ranging from \$100 to \$50,000. At a recent international convention an exhibit of the educational department was a most attractive feature, the scope and character of the work done being a surprising and gratifying revelation.

In 1883 less than 50 associations reported gymnasiums, but the new buildings which about this time began to multiply, afforded better facilities for this feature and stimulated its growth. In five years the number increased to 237, and in another five to 500. These figures, however, are less significant than the improvement in the quality of the work itself. To-day the work is largely on a scientific basis and under the guidance of Christian physical directors, most of whom have received a technical training. An important duty of these officers is to select and train men as leaders, such leaders becoming valuable assistants in the conduct of the physical work. Many associations have athletic grounds and other facilities for summer work, and thus maintain a hold the year round on the members interested in the department. The associations strongly urge a system of all-round training as opposed to that for expert athletic work in one or more specialties. Physical health, needed physical recreation and a symmetrical building up and training of the body for one's life work are the direct objects sought, and form an essential contribution toward all-round Christian manhood.



In 1896 an organized movement in the form of an association athletic league was started in the interests of "clean sport" — being an effort to carry the principles of personal honor and Christian courtesy into the conduct of competitive games. The league has succeeded in raising the standard of athletics throughout the associations, and by its affiliation with other bodies has materially changed the moral tone of amateur athletics generally. The physical department has proved an attractive entrance door to the association; it offers an advantageous field for social contact and often yields the most encouraging results in the work of personally winning young men to Christ. Often a gymnasium Bible class is conducted, composed of members of the department and taught by the physical director.

The importance of the social element has been fully recognized; no department can expect success unless pervaded by its kindly spirit. Effort is made to render the association rooms as homelike as possible by attractive furnishing, music, unobjectionable games and the companionable supervision of a reception committee. The association building by affording more ample accommodation has greatly promoted the social element. Many entertainments are provided for the members, great tact and ingenuity being often displayed in adding new and pleasing features. For the past year nearly 5000 such entertainments are reported. Most of the association buildings and some rented rooms are provided with kitchens and facilities for serving refreshments. Often a tea is served in connection with a committee meeting, adding a pleasing social feature besides being a convenience to those living at a distance.

Under the title of "Information and relief" the association hand book classifies a number of useful features. Statistics of the employment bureau appear first in 1875, when 35 associations report this agency. In the 1899 *Year book*, 338 associations report more than 13,000 situations secured. The Boston association during its first year began directing young men coming as strangers to the city to boarding places where they might "find a quiet home pervaded with Christian influences." This line of effort has been followed in most of the cities. One practical result is that the young stranger is brought into immediate contact with the association. Visitation of the sick is a valued agency and is specially called for in the railroad work, the last year's reports showing nearly 13,000 such visits in that department alone. Relief work is confined to young men. Much is done in a quiet way by the secretaries, who become qualified by experience to exercise the needed discrimination. In large cities an extended work of this character can not be carried on judiciously, except as a separate de-

partment. The Bowery branch of the New York association is almost entirely occupied with this work. Its last annual report shows 34,799 lodgings and 100,450 meals given, 3843 situations secured, and an average daily attendance at the rooms of nearly 1800.

For many years some attention has been given to special effort for boys. Many associations conduct a thoroughly organized and broad work of this character. In the 1899 *Year book* nearly 300 associations report definite work for boys with a membership of over 19,000, an average daily attendance of 6000, 15,000 volumes in boys' libraries, 12,800 using physical means, 4470 religious meetings with a total attendance of 157,721, and 2937 Bible class sessions with a total attendance of 48,009. Boys to the number of 1209 graduated from this department into the association proper, and experience teaches that many of the most valued workers are those who come into the association through the boys' department.

The women of America have always been interested in this work for their sons and brothers, and the potent influence and earnest effort peculiar to their sex could not well be dispensed with. Of late years their aid has been given systematically through organizations styled auxiliaries, or by means of a committee appointed in the same way as other committees of the association. Their help is required specially along social lines. The latest reports show that this work is organized in connection with nearly 500 associations.

III Work for special classes

The present intercollegiate movement began in 1877. A few college associations had been in existence for some years, but



JOHNS HOPKINS UNIVERSITY
UNIVERSITY OF TORONTO
DARTMOUTH COLLEGE

PRINCETON UNIVERSITY

CORNELL UNIVERSITY
UNIVERSITY OF IOWA
YALE UNIVERSITY

**REPRESENTATIVE STUDENT YOUNG MEN'S CHRISTIAN ASSOCIATION
BUILDINGS**



there was little activity or uniformity in methods and no inter-collegiate relationships. But in this year a college secretary of the international committee was placed in the field, and the progress of the work has since been continuous. There are now 550 student associations with a membership of more than 30,000. These include nearly all the leading institutions — colleges and theological and medical schools — which are knit together by a unique system of correspondence, visitation and conferences. The work follows definite and thoroughly outlined plans and is recognized as the most potent factor in the religious life of the colleges. Forty theological institutions representing all the leading evangelical denominations have recently become affiliated with the movement. The international supervision has increased with the growing work till 10 men are now employed, their work being classified as follows: executive and office three, Bible study supervision one, visitation six — three for the colleges in the east, the south and the west, and one each for the three special fields, the theological seminaries and professional and preparatory schools. Many state officers also give more or less of their time to the supervision of this department in their several fields. Four student summer conferences are held — in the east, south, central west, and on the Pacific coast — to promote the study of the Bible, association methods and foreign mission work, while in special conferences presidents are trained for leadership and other members for deputation visiting, to supplement the work of the traveling secretaries. At the summer conferences of 1899, 381 institutions were represented by 1187 students, a larger number than in any previous year. The Bible study work of this department is very strong. A four years' cycle, with specially prepared courses is in operation, and 10,500 students were enrolled in these classes during the past year. Many convenient buildings are being provided for the college associations and more than 30 paid general secretaries give their time to the local supervision.

There have been many important outgrowths from the student work, among them the following:

1 The student summer conference at Northfield beginning in 1885 and since duplicated elsewhere in this and other lands.

2 The student volunteer movement through which more than 1500 have already entered the foreign field, chiefly as missionaries under the various church boards. The traveling secretaries of this movement visit the associations throughout the field, while the educational secretary fosters mission study classes, in which there are over 4000 students.

3 The later movement of the Young women's Christian association.

4 The introduction of the association into schools in mission lands.

5 The foreign work of the American international committee.

6 The World's student Christian federation, organized in 1895, and through which at the present time the Christian students of the world — including 11 national and international student organizations — are brought into helpful relationship and made a potent force for combined moral and religious action.

7 The introduction of the English Bible as a department of study in colleges.

8 The attraction of college students in greater numbers into distinctly religious callings, including association work.

9 Promotion of individual Bible study and a greatly increased religious activity among college students.

10 Many publications designed to aid students in Bible study and religious life and work.

11 Affiliating the great body of Christian students so thoroughly with the association and religious work that their interest continues during after life.

12 Enlisting in the cause of missions many who, as future leaders in thought and men of wealth, will be able to greatly promote its welfare.



PORT HURON, MICH., SARNIA, ONT., same design
 DECATUR, ILL.
 TEXARKANA, TRX.
 TEMPLE, TEXAS.
 POPLAR BLUFF, MO.

ARGENTINE, KAN.

SMITHVILLE, TEXAS
 CLEBURNE, TEXAS
 W. 72ND ST., NEW YORK
 MONETT, MO.
 DU BOIS, PA.

THE TWELVE RAILROAD ASSOCIATION BUILDINGS ERECTED IN 1899



13 Through this agency during the past 22 years between 35,000 and 40,000 students have been led into the Christian life and over 5000 into the Christian ministry.

The present work for railroad men began in 1872. Many previous efforts had been made by railroad companies for the mental and moral betterment of their employees, but the libraries and reading rooms were little frequented, and in no case proved a permanent success. The association work in question had its origin in a religious awakening, resulting from services for railroad men held in the passenger waiting room at a railroad center. It was first proposed by Christian railroad men and conducted by members from the city association and the pastors. The converted men were earnest in their efforts for their fellow employees, and in order to furnish a suitable resort and a place for religious meetings convenient for the trainmen, the railroad officials, in concert with the city association, secured and fitted up a commodious room in the passenger station. A competent man was placed in charge to welcome the men and exercise general supervision. Thus quietly was opened before the associations another door of vast and practical opportunity. Success attended the effort and soon led to the adoption of similar means at other places; but being largely dependent for financial support on the railroad companies, who act purely from the stand-point of business interest and experience, the growth of the work was naturally slow during the experimental period. In 1877 the number of branches had increased to 19, a traveling secretary of the international committee was employed, and the work made more rapid advance. During the past two or three years, however, there has been more marked progress than ever before. In many cases the work is being taken up by systems, the companies asking for the establishment of associations at various division terminals, placing the secretaries on the corporation

pay-roll, and often contributing the larger part toward an association building. During 30 days near the close of the past year eight new and fully equipped railroad associations were opened with new buildings free of debt, costing over \$75,000, 75% of the amount being contributed by the railroad companies. The force of international secretaries for this department has been increased to six, and is still unable to keep pace with the demands for organization and general supervision. There are now 151 railroad associations, but as these are placed at terminal or focal points, where each is a center of influences, covering a large area, the department is not adequately expressed by the number of its organizations. The present membership is 32,000; 4061 are serving on committees, 168 general and assistant secretaries are employed, 55 buildings are either owned by the associations or set apart for their use. Besides the ordinary association agencies certain distinctive ones are employed, such as the rest room, where trainmen can sleep within easy call, baths at all hours, lunch counter, temporary hospital, instruction in first aid, visits to sick and injured, and a railway library from which books may be drawn by catalogue anywhere on the line. Memberships are usually reciprocal, entitling the holder of a ticket at one point to the privileges at all others. The association is highly prized by the employees to large numbers of whom it is a real home. To many also it offers the only available religious services, through which numbers have been led into the Christian life. Many are saved from intemperance and kindred vices, and in some localities evil resorts have been driven out by the withdrawal of the trainmen's patronage. As a single instance, a saloon keeper made the complaint that his income had fallen off from \$3000 to less than \$700 a month since the opening of one of these buildings. The work has the hearty commendation of leading railroad officials on the roads where it is in operation, and many of them are among its most earnest supporters. The belief in its utility is practically shown by ap-

appropriations toward its support (not including sums given for buildings) of over \$175,000 a year. The United States interstate commerce commission designates it as "a work commending itself even on the most practical grounds of pecuniary self-interest."

American cities are cosmopolitan in their population and the associations are thronged with young men of foreign birth, who are heartily welcomed. In some cases it has seemed advisable to attempt a separate organization for certain classes of non-English-speaking young men, but it is becoming more and more the practice to assimilate these different elements with the American branches.

Work among the Africo-American young men was urged by southern delegates at the international convention in 1876. Three years later an international secretary was placed in charge of the work. The growth of this department has been along conservative lines and full of difficulties, but there are now in existence 65 associations, 48 of them being in institutions of learning.

Since 1877 work has been attempted among the Sioux Indians, where about 50 associations have been organized and much good is being done. A young man of the tribe, who has had a three years' course of training in the Springfield secretarial school, is in charge.

The broad and flexible methods of the association adapt its work to all classes of men and to every variety of condition. Besides its many-sided city work and the special departments already outlined there are many other fields less important only because less in extent or less fully developed. Effective work has been done among the thousands of young men in the lumber districts, specially in the upper lake region. At the state and provincial militia encampments well-equipped association rooms are improvised in tents; the soldiers are attracted by the home papers, books and magazines, music, par-

lor and outdoor games, conveniences for letter-writing and social entertainments; religious literature is distributed and earnest religious services are conducted. The result in an improved camp morale is such as to win the hearty approval and cooperation of the officers. Commercial travelers — a numerous class and mostly young men — are granted special membership tickets, honored reciprocally in nearly all city associations. Special effort is made in many cities and sections in behalf of firemen, sailors, miners, artisans and mill men. Also in many towns the male wards of hospitals and prisons are systematically visited, religious services being conducted or personal conversation held with the men. The associations as a rule are on the alert for opportunities, where they may be helpful to young men, and seek to adapt their methods to every new problem of rational endeavor.

Mention has been made of the part taken by the associations in the army relief work during the civil war of 1861-1865, and also of the work conducted by many of the state committees in the militia camps. When the late war with Spain broke out another door of opportunity was generally and at once recognized. Letters and telegrams began to pour in at the international office urging immediate action, and three days after the president's first call for volunteers a meeting was held to formulate the work. The nucleus of an army and navy committee was formed, one of the field secretaries was detailed as its executive officer, and within one week Washington had been visited, the cooperation of the government authorities obtained, and men and equipments were on their way to the front. The state committees with few exceptions also took up the work, and did at the state camps what the international committee essayed to do in the national ones. Within two months' time there were in operation no less than 40 regimental and brigade tents, with good all-round association equipments, and



ASSOCIATION ROOM, MILITARY HOSPITAL No. 1, HAVANA, CUBA





LIBRARY



CORRESPONDENCE ROOM

ARMY ASSOCIATION INTERIORS, SAN JUAN, PUERTO RICO



in charge of 60 trained secretaries. Never before did the association so measure up to a grand opportunity and so demonstrate the adaptability of its methods and the thoroughness of its organization.

The work was maintained through the campaign, tents and secretaries following the troops to Cuba, Puerto Rico and the Philippines, as many as 90 tents being in operation under the supervision of 175 secretaries. The tents were large and airy, generally 40 by 60 feet in size. Facilities for correspondence were given free, nearly 4,000,000 sheets of letter paper with envelopes being furnished, for some time at a cost of \$1000 per week, and ice water at an expense of \$100 per day. An organ and song books were placed in each tent, papers and magazines were kept on file, games of skill and recreative entertainments were provided and Bible classes and gospel services were held. Sixty thousand Testaments, as many of the *Army and navy song books*, 10,000 *Medical rules for camp life*, and tons of tracts, books and magazines were distributed. The tents were open at all times for the use of the army chaplains and services were frequently held by evangelists, a section of the army and navy committee under the chairmanship of D. L. Moody, furnishing a large number of these workers. Such meetings were often attended by from 500 to 2000 men, and large numbers were led to accept Christ as their personal Saviour.

The association workers were untiring in their efforts and won the universal respect and good will of both officers and men. In the field they were found even on the firing line with their first aid packages, and rendered valuable service to the sick and dying in the hospitals. Many of the secretaries themselves suffered from sickness and several sacrificed their lives in the work.

For the sailors a similar, though less extensive work was carried on, particularly in the large naval rendezvous at Key West, where a building was opened and fitted up as an asso-

ciation headquarters, and many of the warships were visited by the secretaries.

The hearty approval by officers and men of the association's work in the army and navy during the campaign of 1898, and urgent requests for its continuance and extension, led to its being made a permanent department of the international committee. Associations have been established during the past year at various points occupied by the troops in Cuba, Puerto Rico and the Philippines, and many auxiliary organizations formed in the regiments in the field. Associations have also been organized at many home army posts, and the work is received with general favor. By request of the War department the international committee sends representatives with many of the troop ships to the Philippines, and with them a supply of stationery and reading matter for the use of the men en route. Large quantities of such material are also shipped to the associations in the distant fields, more than 25 tons having passed through the international office during the past year, besides that sent direct from other sources. A generous friend of the work has donated a large number of books, which are arranged in traveling libraries, containing about 50 volumes each, to be circulated among the army post associations. Some 20 such libraries are already in use.

A thoroughly organized work is also being carried on in the navy. A general Naval young men's Christian association has been formed with prominent naval officers on its supervising committee, and membership tickets are issued which entitle the holders to privileges in any naval branch, and in the city associations in the principal seaport towns. A naval branch with attractive rooms, restaurant and dormitories has been opened in rented quarters near the New York navy yard, and it is expected to soon supply its place with a commodious building, erected for the purpose. Auxiliary associations are also being formed on many of the warships.

The introduction of the association into Christian colleges in foreign mission lands, beginning with 1884, and chiefly through the efforts of teachers formerly identified with college associations in America, created strong ties between these associations at home and abroad. And as experience proved the success of the transplanted college work, the question also arose regarding the needs of the young men of the cities and the adaptation of the ordinary association methods to them. This thought, which all along had been in the hearts of the leading association workers in America, was first given to the public at the Northfield student summer conference of 1887 in an appeal from a veteran missionary for men to inaugurate the work in India. Later, a formal request for such action came to the American committee from a representative body of missionaries on the field. The question was also favorably discussed by the world's conference at Stockholm in August, 1888. In December of that year an American international secretary started on a round-the-world tour of inspection as the representative of the world's committee. The international convention of 1889, formally authorized the sending of secretaries of the American committee to foreign mission fields for the purpose of establishing model associations at certain strategic centers and training native Christian young men to carry on the work. This was to be done in cooperative harmony with the resident missionaries of the various church boards. In accordance with this action two men were commissioned as secretaries, respectively, for India and Japan, both starting from New York, October 2, 1889, and taking up the work, the former in Madras and the latter in Tokyo. This line of effort has been continued by the committee till its foreign work department has now 18 men in the field, six having been sent out during 1899. In Japan the foundations for a strong native work are being laid, more particularly among the student class. Tokyo has an excellent city association, with capable Japanese supervision and an attractive and commodious

building costing \$60,000, while a well-adapted building for the student work has been erected and opened during the past year. India and Ceylon are thoroughly organized and have a substantial and growing work. They number at least 125 associations with more than 6000 members. They own several exceptionally fine buildings, that at Madras costing \$66,000, and the student building in Calcutta \$75,000. In China five men are located at as many centers, at one of which a suitable building has been erected, and the general outlook is very encouraging. Rio de Janeiro, Brazil, has a thriving association, which occupies an excellent building, recently erected for its use. This fruitage is very largely from the sowing, and much of it the direct result of the planning and labors of the American committee.

PARIS DECLARATION

(Adopted by the World's conference in Paris, 1855)

The Young men's Christian associations seek to unite those young men, who, regarding Jesus Christ as their God and Saviour, according to the Holy Scriptures, desire to be His disciples, in their doctrine and in their life, and to associate their efforts for the extension of His kingdom among young men.

PORTLAND RESOLUTIONS

(Adopted by the International convention in Portland, Me., 1869)

Resolved, That, as these organizations bear the name of Christian, and profess to be engaged directly in the Saviour's service, so it is clearly their duty to maintain the control and management of all their affairs in the hands of those who profess to love and publicly avow their faith in Jesus, the Redeemer, as Divine, and who testify their faith by becoming and remaining members of churches held to be evangelical. And we hold those churches to be evangelical, which, maintaining the Holy Scriptures to be the only infallible rule of faith and practice, do believe in the Lord Jesus Christ (the only begotten of the Father, King of kings, and Lord of lords, in whom dwelleth the fulness of the Godhead bodily, and who



WEST SIDE BRANCH, NEW YORK ASSOCIATION

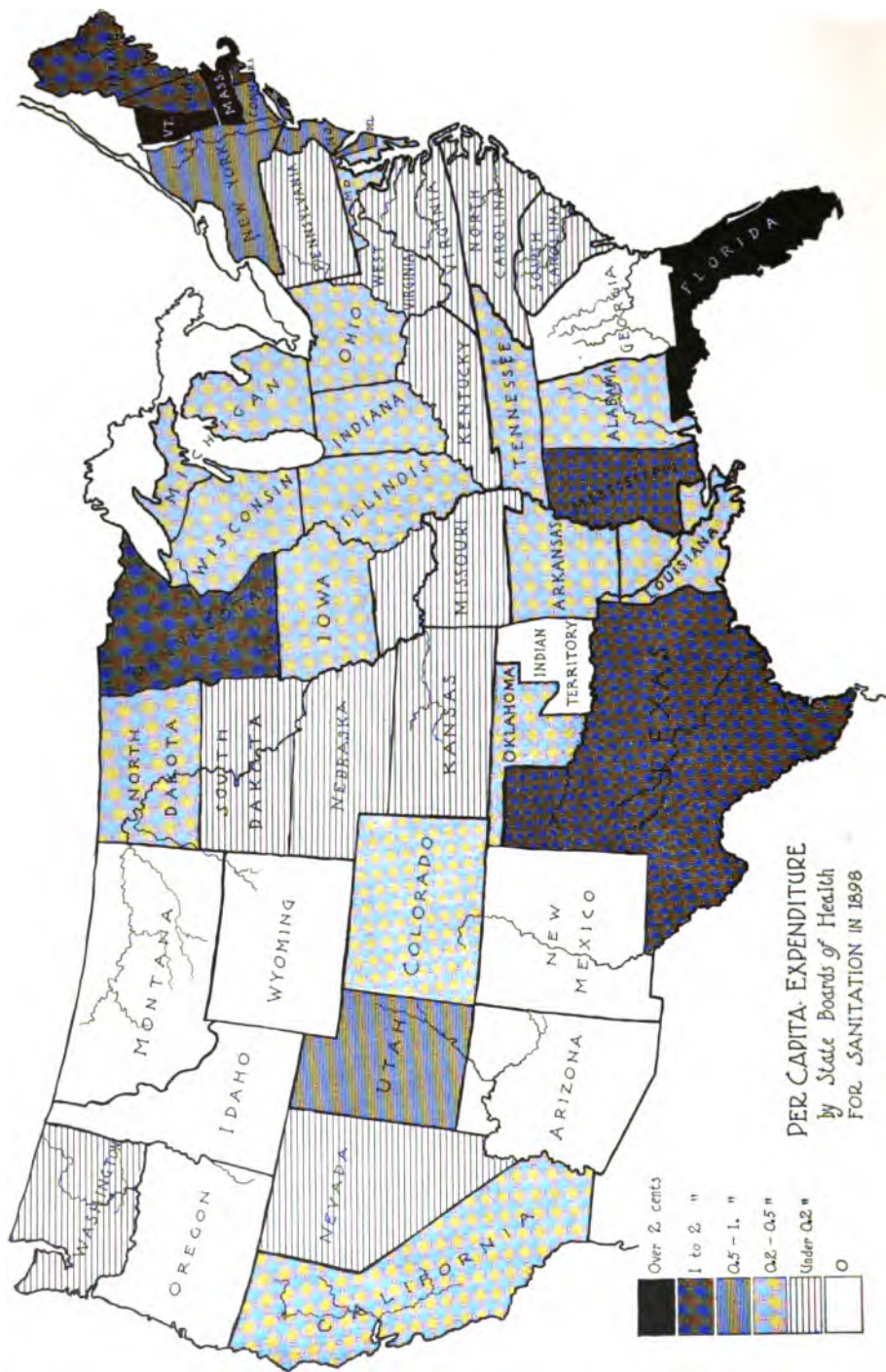


was made sin for us, though knowing no sin, bearing our sins in His own body on the tree), as the only name under heaven given among men whereby we must be saved from everlasting punishment, and unto life eternal.

Resolved, That the associations organized after this date shall be entitled to representation in future conferences of the associated Young men's Christian associations of North America, upon condition that they be severally composed of young men in communion with evangelical churches; provided, that in places where associations are formed by a single denomination, members of other denominations are not excluded therefrom, and active membership and the right to hold office be conferred only upon young men who are members in good standing of evangelical churches.







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MONOGRAPHS
ON
AMERICAN SOCIAL ECONOMICS

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XIX
THE PAST AND PRESENT CONDITION
OF
PUBLIC HYGIENE AND STATE MEDICINE
IN THE
UNITED STATES

BY
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SAMUEL W. ABBOTT

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The six statistical maps of the United States published in this monograph were prepared by Prof W. Z. Ripley of the Massachusetts institute of technology.



INTRODUCTORY

In the following monograph it is the writer's intention to show in as brief a manner as possible the **progress which has been attained** in the United States in matters pertaining to the **public health**. The chief topics relating to this subject will be presented concisely, and lengthy details will be avoided except in a few illustrative instances. The term "hygiene" is well defined as follows in the introductory sketch by Dr John S. Billings in Buck's *Treatise on hygiene and public health* (New York 1879) to which the reader is referred for a full discussion of its history in the United States. Other excellent sketches may be found in some of the annual addresses of the presidents of the American public health association and in other published papers of the same character in the proceedings of that association.

In its broader sense, the study of hygiene includes the examination of the conditions which affect the generation, development, growth and decay of individuals, of nations, and of races, being on its scientific side coextensive with biology in its broadest sense, including sociology, rather than with physiology merely, as some writers state.

He further says:

It can be shown that the direct pecuniary loss to this country on account of preventable sickness and mortality is certainly over \$100,000,000, annually, and this without taking into account expenditures incurred on account of sickness, etc., or the unusual losses due to great epidemics, both from waste of life and injury to commerce.

It is evident, therefore, that hygiene is not only a subject of scientific interest to the student, or to medical men, but that to the political economist and to the legislator its problems and discoveries ought to be of great practical importance—greater, in fact, than many of the subjects with which those gentlemen usually occupy themselves; and, at first sight, it may seem strange that it should not receive more attention and consideration from politicians

and legislative bodies than we actually find to be the case. A standing committee on public health would be about the last committee that either congress or a state legislature would think of organizing.

The foregoing statement was published just 20 years ago, and as a proof of decided change of sentiment upon this subject it is a fact that such committees now form a part of the organizations of state legislatures in very many of the older states, and are also supplemented by other committees organized for the consideration of water supplies, sewerage and drainage, and other questions pertaining to public hygiene.

The term "**state medicine**" is a broader term than public hygiene since the former includes the latter, together with legal medicine, medical education, and all subjects which treat of the relation of the physician to the state. In this monograph the two topics of medical registration and the inquest laws have received consideration since very decided progress has taken place in the former in nearly every state, and in a few states the inquest laws have been entirely remodeled.

The **discoveries of Pasteur** have revolutionized, not only many of the departments of medicine, but also the operations of agriculture, and the states of the Union have not been slow to recognize the value of his work, and of its important bearing on the welfare of the human race, and to apply the principles involved in Pasteur's discoveries to the rapidly increasing population of the new world.

Dr Jenner had discovered and brought to public notice the **protective power of vaccination** at the very threshold of the 19th century, and Dr **Waterhouse** of Cambridge, Mass. had sent to Dr Jenner within a few months of his discovery, for a supply of lymph, from which the practice was introduced in the eastern states of the Union. Very soon after this no less a personage than the third president of the United States, **Thomas Jefferson**, sent to Dr Waterhouse for supplies of lymph, and from these sources the practice soon spread throughout every town and hamlet in the 13 thinly settled

states of the Union. As a necessary result the death-rate from small-pox in the United States in the 19th century has been reduced to a mere fraction as compared with that of the 18th.

But, while Jenner had by observation and experiment found out the value of vaccination, he neither comprehended nor recognized the foundation principle which accounts for the spread of all contagious diseases — the **germ theory of infection**, the true natural history of which was not understood till the latter half of the 19th century, when Pasteur had first penetrated the veil, and was soon followed by a host of other observers who have pursued similar lines of inquiry in regard to the nature of cholera, typhoid fever, yellow fever, diphtheria, tuberculosis, anthrax, tetanus and other diseases. Having once learned the source and methods of infection in the different kinds of diseases, it remained to apply the knowledge thus gained to the great and important work of disease prevention.

It is the exercise of this function, the **prevention of disease**, which forms the first and most important duty of sanitary authorities.

In a monograph of this character the various topics pertaining to public hygiene must necessarily be treated in an extremely concise, condensed manner, and must also be shorn of extended details. It is for this reason, therefore, that a few tables of statistics have been introduced in order that the facts relating to the subjects may be given in the least possible space.

If the writer were called upon to state in the briefest manner possible what are the **most prominent points** in relation to **public health** in the United States, to-day, he would mention **first** of all the marvelous rapidity with which the introduction of **public water supplies** has been effected in the past 25 years, specially in the states west of the Mississippi valley. **Second**, the stimulus which has been given to the methods employed for **preventing the spread of infectious diseases**, through the agency of **bacteriological investigations** and the

establishment of public and private laboratories for aiding sanitary work.

Third, the necessity of providing a central bureau or department, having authority to collect the vital statistics of the United States, from the different states and territories, and to publish the results of the same. It should also be the duty of such bureau to secure uniformity in the methods of collection and presentation in all parts of the country.

Fourth, the need of one strong, central sanitary organization at Washington to cooperate with and to aid state and municipal sanitary authorities in every branch of public hygiene. The duty of collecting and publishing the vital statistics of the country might properly be entrusted to such an organization.

The imperfect character of some of the observations noted in this monograph is accounted for by the fact that all of the information obtained from sanitary authorities, of whatever kind, has been entirely voluntary, and consequently less complete than that which could have been obtained by a national sanitary authority authorized to collect information by statutory requirement, had such an authority existed. The thanks of the compiler are, therefore, the more heartily extended to all those authorities who have cheerfully aided him, at the cost of considerable time and trouble, with such information as was sought.

ORGANIZATION OF STATE BOARDS OF HEALTH

Public health in the United States, as in all other countries, has been a question of evolution from small beginnings, and is of comparatively recent growth.

The laws relating to this subject enacted by the general government and by the states reflect the attitude of the people. The number of such laws which appear in the early history of the colonies is not large. It is, however, a matter of interest to know that the early settlers soon after arriving in America recognized the need of definite knowledge on this subject, and of preserving their records, which constitute the foundation stone of public hygiene, by enacting a law in 1639, that "there be records kept, . . . of the days of every marriage, birth, and death of every person in this jurisdiction".

Progress in this direction during the first two centuries of the new nation's growth was slow and proportionate to the sparsity of the new settlements, density of population, from necessity constituting a prime factor in promoting public health measures.

Up to the close of the 18th century, and for several decades of the 19th, almost the only health legislation which was enacted in the different states of the Union consisted in a few laws relating to small-pox, since this pestilence was scarcely ever absent for many years at a time from any city, town or village, till after the general introduction of vaccination.

A serious epidemic of cholera prevailed in Europe in 1831, reaching America in 1832, and invading the country by way of Quebec and Montreal, scarcely any of the cities and large towns escaping its ravages. New Orleans alone lost more than 8000 of its citizens from this cause, out of a total population of about 55,000. But this epidemic does not appear to have taught the lesson of public health and cleanliness, and it was reserved for the epidemic of 1848 and 1849 to thoroughly

arouse the people to the importance of initiating public sanitary measures. A case of cholera had already been reported at quarantine in New York harbor in December 1848, the disease was prevailing with unusual severity in eastern countries, and there was great fear, specially in the eastern states of the Union (which were then more permanently occupied with settled towns and cities than the western states), lest the experience of 1832 should be repeated. It was this condition of affairs which undoubtedly led the Massachusetts legislature of 1849 to enact a resolve calling for the appointment of a commission to make a sanitary survey of the state and to report upon the same.

This commission was appointed by the governor of Massachusetts, July 3, 1849.¹ The appointment was made none too soon, for in that year the general sanitary condition of the state, as shown by the succeeding report of the commission, as well as by the unusually high death-rate, was deplorable. Only a few towns had then introduced public water-supplies, cholera was beginning to appear again, and dysentery and other infectious diseases were more destructive than they had been for many years.

The report of that commission was an extremely valuable document. It was at once intelligent, thorough, comprehensive and prophetic, and though several years elapsed after its publication before a general board of health was established in any state,¹ it is nevertheless true, that when such boards were established, the general plan laid down in this report was adopted, and now appears essentially in the organic acts establishing such state boards throughout the Union.

The first 3 state boards of health were organized in 3 widely separated states, Louisiana, Massachusetts and California, in the order named; and these were followed by

¹) The Louisiana board created in 1855 could hardly be classed as a state board of health though so named in its organic act, since it was created almost entirely for maintaining a quarantine to protect the city of New Orleans. See appendix 3.

the establishment of similar general boards in Virginia, Minnesota and Michigan. The states and territories which have thus far established state boards of health, with the dates of organization, are given in the following list :

Louisiana, 1855	Iowa, March 1880
Massachusetts, June 1869	New York, May 1880
California, March 1870	Arkansas, March 1881
Virginia, February 1872	Indiana, March 1881
Minnesota, March 1872	West Virginia, March 1881
Michigan, 1873	New Hampshire, August 1881
Maryland, April 1874	Missouri, March 1883
Alabama, January 1875	Maine, February 1885
Georgia, June 1875	Kansas, March 1885
Colorado, February 1876	Pennsylvania, June 1885
Wisconsin, March 1876	Ohio, April 1886
Mississippi, February 1877	Vermont, November 1886
New Jersey, March 1877	Florida, February 1889
Tennessee, March 1877	North Dakota, 1889
Illinois, May 1877	Nebraska, March 1891
Connecticut, January 1878	Washington, March 1891
Kentucky, March 1878	Oklahoma, March 1891
Rhode Island, April 1878	South Dakota, March 1891
South Carolina, December 1878	Nevada, March 1893
Delaware, 1879	New Mexico, February 1895
North Carolina, 1879	Utah, February 1898

Further comment on the organization of these boards may be found in appendix 3.

As social civilization has proceeded from the less to the greater, from the town and city to the county, and from the aggregation of these to the state, and then to the general government, so also the history of sanitary organization shows a similar order, the town board being the earliest unit of sanitary authority, then the state boards, and finally the national board which was not organized till 1879.

The city or town board of health is and always has been the most firmly established organization, and is usually clothed with the most arbitrary powers for the protection of each local community or municipality.

In general, it may be said that the **work of state boards of health** has not been largely of an executive character, but has been **eminently didactic**, and much good has been accomplished by the publication and distribution of tracts, circulars and pamphlets relating to the various departments of public health, and by the holding of frequent conventions or assemblies for the free discussion of sanitary subjects.

As a general rule state boards of health do not have authority over local boards in sanitary matters,¹ but in some instances are authorized to exercise coordinate power with them in preventing the spread of infectious diseases, either within the limits of municipalities or along the border of other states or countries.

The most important branch of public hygiene is the **management and control of infectious diseases**, and while the state boards of health are, from their necessary composition, not so closely in touch with the people as the municipal boards, yet they are capable of doing excellent service in educating the people in this important sanitary question. In those states which are the most densely settled, and are of comparatively small area, it has been possible for the general boards to perform a considerable amount of executive work, and to carry out the provisions of such laws as have given them authority to act for the protection of the public health.

In several of the states, notably those of the western part of the Union, the function of **regulating the practice of medicine** has been added to the more distinctive duties of public sanitation.

A valuable summary of the powers and duties of state boards of health as they existed in 1879, may be found in Dr Billings' *Introduction to the volumes on hygiene* published in New York by Dr A. H. Buck.² In this summary Dr Billings says — "The state board of health should be the central

1) See appendix 3, for note on a new law of the state of Indiana.

2) *A Treatise on hygiene and public health*, edited by Albert H. Buck, M.D. v. 1, p. 55. W. Wood & Co., N. Y. 1879.

supervising authority, having much the same relation to local boards, that the local board has to the households. Its functions may be classed as follows: 1) to promote the organization of local and municipal boards; 2) to obtain medical and vital statistics; 3) to investigate the causes of undue sickness and mortality; 4) the removal of these causes, acting as far as possible through the local sanitary authorities; 5) the supervision of the hygiene of state institutions; 6) the supervision of quarantine."

The following table presents the **per capita expenditure** of each state board of health in 1898, upon an estimated population for that year. For a more extended explanation and table see appendix 1, and chart facing title-page.

ANNUAL PER CAPITA EXPENDITURE OF STATE BOARDS OF HEALTH
(POPULATION ESTIMATED TO 1898)

Groups	States and territories	Fraction of dollar	Francs	Groups	States and territories	Fraction of dollar	Francs
Over 2 cents	Florida	.0866	.450	Less than 2 mills	West Virginia	.0017	.009
	Vermont	.0301	.160		Missouri	.0016	.008
	Massachusetts	.0236	.120		Kansas	.0015	.008
1 cent to 2 cents	Rhode Island	.0167	.087		Nevada	.0015	.008
	Texas	.0144	.075		Kentucky	.0012	.006
	Mississippi	.0141	.074		South Carolina	.0012	.006
	Maine	.0112	.059		North Carolina	.0011	.006
	New Hampshire	.0106	.055		Virginia	.0011	.006
	Minnesota	.0105	.055		Pennsylvania	.0010	.005
5 mills to 1 cent	Utah	.0098	.051		South Dakota	.0010	.005
	Connecticut	.0092	.048		Washington	.0007	.003
	New Jersey	.0089	.046		Nebraska	.0001	.0006
	Delaware	.0070	.037	0	Arizona	.0000	.000
	New Mexico	.0055	.029		Georgia	.0000	.000
	New York	.0052	.027		Idaho	.0000	.000
2 mills to 5 mills	Maryland	.0049	.026		Montana	.0000	.000
	Colorado	.0042	.022		Oregon	.0000	.000
	North Dakota	.0040	.021		Wyoming	.0000	.000
	Ohio	.0040	.021				
	Louisiana	.0040	.021				
	Arkansas	.0036	.019				
	Michigan	.0035	.018				
	Oklahoma	.0032	.017				
	Tennessee	.0029	.015				
	Wisconsin	.0028	.015				
	California	.0027	.014				
	Iowa	.0023	.012				
	Indiana	.0021+	.011				
	Illinois	.0021	.011				
	Alabama	.0020	.010				

NATIONAL HEALTH ORGANIZATION

At the present time the United States is in the unfortunate position of being **without any general health organization** representing the national government, which can in any manner be compared with those of the countries of Europe, for example, the Comité consultatif d'hygiène of France, the Imperial board of health of Germany, or the Local government board of England.

It is proper in this connection to give a brief review of the establishment, **history and overthrow** of the **National board of health** of the United States. The stimulus which led to the formation of this board was undoubtedly the same which has proved to be the initiative in the establishment of other similar general organizations, namely, the unusual prevalence in some part of the country of an epidemic disease. Asiatic **cholera** had visited the country in 1872 and 1873 to such an extent as to lead to the appointment of a commission by congress to investigate the prevalence of the disease and to report on it.¹

This epidemic became general throughout the southern and western states, but did not extend eastward beyond the Alleghany mountains. Another disease which has visited our shores at irregular intervals, coming invariably from tropical regions south of the United States, is **yellow fever**. Wherever it makes its appearance the population becomes alarmed, is more or less demoralized, and industry is paralyzed for the time being. In 1878, yellow fever had prevailed with unusual severity in the Gulf states and Tennessee, and to some extent in Kentucky and Missouri, and had caused the death of nearly 16,000 persons out of a total of about 74,000 cases.²

These facts proved to be a sufficient incentive for the organization of a **general board of health** which should have

1) See *U. S. government report upon cholera in 1873*, 43d Cong., 2nd session. Ex. doc. No. 95.

2) Dr Sternberg in *Wood's reference handbook*, v. 8, p. 45.

in charge the sanitary interests of the whole country—and in March 1879, the following act was passed by congress creating a National board of health :

AN ACT TO PREVENT THE INTRODUCTION OF INFECTIOUS OR CONTAGIOUS DISEASES INTO THE UNITED STATES, AND TO ESTABLISH A NATIONAL BOARD OF HEALTH

Be it enacted by the senate and house of representatives of the United States of America in congress assembled :

§ 1 That there shall be established a National board of health to consist of seven members, to be appointed by the president, by and with the advice and consent of the senate, not more than one of whom shall be appointed from any one state, whose compensation, during the time when actually engaged in the performance of their duties under this act, shall be \$10 per diem each and reasonable expenses, and of one medical officer of the army, one medical officer of the navy, one medical officer of the marine hospital service, and one officer from the department of justice, to be detailed by the secretaries of the several departments and the attorney-general, respectively, and the officers so detailed shall receive no compensation. Said board shall meet in Washington within 30 days after the passage of this act, and in Washington or elsewhere from time to time upon notice from the president of the board, who is to be chosen by the members thereof, or upon his own adjournments, and shall frame all rules and regulations authorized or required by this act, and shall make or cause to be made such special examinations and investigations at any place or places within the United States, or at foreign ports, as they may deem best, to aid in the execution of this act and the promotion of its objects.

§ 2 The duties of the National board of health shall be to obtain information upon all matters affecting the public health, to advise the several departments of the government, the executives of the several states, and the commissioners of the District of Columbia on all questions submitted by them, or whenever in the opinion of the board such advice may tend to the preservation and improvement of the public health.

§ 3 That the board of health, with the assistance of the Academy of science, which is hereby requested and directed to cooperate with them for that purpose, shall report to Congress at its next session a full statement of its transactions, together with a plan for a national public health organization, which plan shall be prepared after consultation with the principal sanitary organizations and sanitarians of the several states of the United States, special attention being given to the subject of quarantine, both maritime and inland, and especially as to regulations which should be established between state or local systems of quarantine and a national quarantine system.

§ 4 The sum of \$50,000, or so much thereof as may be necessary, is hereby appropriated to pay the salaries and expenses of said board and carry out the purposes of this act.

Approved March 3, 1879.

The national board, immediately after its membership was completed, set about the duties required by the statute under which it was organized. **Inspectors were appointed** to visit the different **quarantine stations** and report without delay as to their condition and necessities. The action of the board met the cordial approval of the health officials of nearly every state in the Union, and its position was strengthened by further legislation in June 1879, but its usefulness as a public authority was destroyed at the end of the period during which the act was operative (four years) by the failure of congress

to make the necessary appropriations for the continuance of its work.

The board had accomplished much useful sanitary work in the inspection of quarantine stations, in dealing with epidemics, specially the outbreak of yellow fever at Memphis and New Orleans in 1879, and had undertaken and entered upon very many scientific investigations which gave promise of results, which, if continued, would have reflected much credit not only on the board, but on the country which maintained it. These investigations as summarized in the report of the board for 1884, under 32 separate heads, comprised subjects in nearly every department of sanitary work.

An examination of the reports of the board, together with the weekly bulletins which it published for several years, is sufficient proof of the good work accomplished during the operation of the act under which the board was constituted. The failure of congress to continue this useful work, and the final dissolution of the board, as a consequence, can only be regarded as a serious mistake, which should be remedied by its reestablishment upon such lines as will meet the general approval of all state and municipal authorities, with whose hearty cooperation, its own work and their own would be strengthened and made more efficient for the protection of the people.

VOLUNTARY HEALTH ORGANIZATIONS

On April 18, 1872, several gentlemen, mostly physicians, met in New York city for the purpose of considering the question of establishing a voluntary national organization for the promotion of sanitary science and the public health. This preliminary meeting was held at the New York hotel, and after deliberation, a committee was chosen to report a plan of organization at a subsequent meeting.

This meeting was held, and a permanent organization of the American public health association was effected on September 12, 1872, at Long Branch, New Jersey.

The following gentlemen were elected as its officers :

President, Dr Stephen Smith, New York.

1st Vice-President, Dr Edwin M. Snow, Providence, R. I.

2d Vice-President, Dr C. B. White, New Orleans, La.

Treasurer, Dr John H. Rauch, Chicago, Ill.

Secretary, Dr Elisha Harris, New York.

The next meetings were held at Cincinnati, Ohio, May 1, 1873, and at New York city, November 11, 1873, and from that time onward meetings have been held annually in the fall of each year in different parts of the country, in order that members from all sections might be accommodated. The meetings have usually been opened on Tuesday morning and have continued four or five days, with evening sessions, at which papers have been read and discussed relating to all subjects connected with the work of public health.

After the association had continued its work for 12 years, invitations were sent to the sanitary authorities of the **British North American provinces** to join it, which they did, and have formed a valuable addition to its membership. Later on, a similar invitation was sent to the **states of Mexico**, with the result of enlarging the scope and membership of the association still farther. The membership consists of sanitary officials of state and municipal boards of health, of delegates from the army, navy and marine hospital service, of chemists, engineers and bacteriologists, and of citizens in general who are interested in sanitary science.

It has proved to be a great **public educator** in matters pertaining to the health of the people, not only in the localities where its meetings have been held, but also through the medium of its published transactions, prize essays and other papers. It is not too much to say that its action has had a salutary influence in molding the work of public health at Washington.

Within the association, **committees** on all the prominent topics connected with public sanitation have been organized,

and have proved extremely efficient in carrying out its special lines of work. Not the least of these is the **committee on laboratories**, which was organized at a recent meeting of the association.

Another organization which is an outgrowth of this association is the **National conference of state and provincial boards of health**, which, after several preliminary meetings, was first convened at St Louis, in October 1884, the object and end of which is to secure cooperation and uniformity of methods of work among state or general boards of health. This organization at first held its meetings at the same place with the American public health association, but in later years has met at other times and places. The 13th annual report of its proceedings was published at Indianapolis, in August 1898.

The **American medical association** is a much older organization, having been formed more than half a century ago. Recently, a **section** of this association was organized for the purpose of discussing questions relating to **state medicine and public hygiene**. This section meets annually at the same time and place with the association, and has proved to be a very important and useful department of its special lines of work. Many of the members of the American public health association are also members of this section.

Another organization with objects closely allied to those already named is the **American climatological association**, which was organized at Washington May 3, 1884. Its first officers were Dr A. L. Loomis of New York city, *President*, Dr F. I. Knight of Boston, *1st Vice-President*, Dr W. H. Geddings of Aiken, S. C., *2d Vice-President*. The association has published an annual volume of its proceedings in each year since its organization. In addition to the foregoing, state sanitary organizations and conventions have been organized in the older states and have held meetings regularly, usually once in each quarter, for the discussion of topics relating to sanitary science. It has usually been the policy of these organizations to change the place of meeting frequently,

in order to give an opportunity to the sanitary authorities and different districts to take part in the meetings, as a matter of mutual benefit to all.

The oldest of these, the New Jersey sanitary association, had its 24th annual meeting at Lakewood, New Jersey, December 9, 1898. Similar organizations exist in Vermont, New Hampshire, Massachusetts, Pennsylvania, Michigan, Ohio, Maryland, and other states.

THE MANAGEMENT AND CONTROL OF INFECTIOUS DISEASES

This department of sanitary work constitutes the **most important of all the duties**, both of general and local boards of health. So far as **state or general boards** are concerned, the functions pertaining to this branch of work consist mainly in giving advice, in investigating the causes of outbreaks of disease, and in the circulation of general information among the people in regard to the methods of preventing the spread of disease. General boards are sometimes given coordinate powers with local boards, to be used in cases of emergency.

The **local board**, on the other hand, in consequence of being (by reason of its mode of organization) in closer touch with each individual member of the community, is usually clothed with extraordinary power, for the purpose of dealing with infectious diseases whenever and wherever they are observed among the people.

The **operations of local boards** of health in this direction are enforced by the aid of laws, ordinances and rules, and the different methods employed are *first, notification, second, isolation and third, disinfection*. To this may be added, for the purpose of securing immunity from certain diseases, the provision of **vaccination** as a protection against the dangers of small-pox, and of certain **antitoxins** for securing immunity against other diseases, notably against diphtheria.

By far the greater use, however, of these latter products, has been of a therapeutic nature, in treating disease when actually existing in the individual. But custom has in this

case so closely associated the methods of prevention with those of treatment, as to place the distribution of such therapeutic remedies largely within the control of the sanitary authority.

Notification. Till within the past 20 years this important measure was scarcely recognized in the statutes except in the single instance of small-pox, such indefinite terms as "other contagious diseases" or, "diseases dangerous to the public health" being largely employed previous to 1880. These doubtful terms gave somewhat discretionary powers to health boards, till laws were enacted defining the diseases which were notifiable, or gave to boards of health authority to state what diseases should be notified.¹

It is now quite generally the custom throughout all the more densely settled states, and specially in the cities and large towns, to require notification of small-pox, diphtheria (including membranous croup), scarlet fever and typhoid fever. To these may be added in a more limited degree, measles, cerebro-spinal meningitis, yellow fever (chiefly in states south of lat. 36°), leprosy, Asiatic cholera,² whooping-cough and German measles.

The growth of this important measure has been much more rapid in the United States in the past 10 years than in all other years preceding.

Notwithstanding the general recognition of the **infectious character** of **tuberculosis**, the propriety of requiring its notification in common with other infectious diseases, and on similar terms, does not appear to have become generally acknowledged in the United States, and the only large city in which such notification is compulsory is New York, where by the following order of the board of health of the city, such notice is called for :

§ 225 of the sanitary code, adopted January 19, 1897, classes pulmonary tuberculosis as "an infectious and communicable disease." Under the provisions of this section *physicians are*

1) In England the statutes give to districts local option in this matter except in London.

2) This disease has not occurred within the United States since 1873.

required to report to the health department the *name, address, age, sex, and occupation*, of every case of pulmonary tuberculosis coming under their professional care. *The information thus received is SOLELY FOR REGISTRATION, and cases so reported are not visited by the inspectors of this department, nor are they interfered with in any way, except upon the request of the attending physician.*

The residences of all cases of tuberculosis reported to this department *by public institutions* are visited by medical inspectors, who there give information with regard to the nature of the disease and the precautions necessary to prevent the infection of others. When residences occupied by consumptives are vacated through the death or removal of the patient, the inspectors recommend the renovation required to free them from infection. The orders for such renovation are enforced by the board of health.

Postal cards for the notification of cases of tuberculosis, and circulars of information for physicians and for the public, can be obtained from this department upon application.

Notification presents another advantage as an aid to the **prognosis of disease**, since by ascertaining quantitatively the amount of disease prevailing in a district, by means of a system of notification efficiently maintained, the health officer can compare the same with the mortality, and determine with a fair degree of accuracy the fatality of each disease to which the system is applied.

In consequence of inquiries sent out by the commission in 1899, information was secured in regard to **619,765 reported cases** of small-pox, typhoid fever, scarlet fever, diphtheria and measles, which occurred in the years 1894, 1895, 1896, 1897, and 1898, together with **75,715 registered deaths** from these diseases which occurred in the same years. These were reported by the following states and cities :

STATES ¹

Massachusetts	. 1894-98	Vermont	. . 1896-97
Michigan	. . 1894-98	Connecticut	. 1898
Rhode Island	. 1894-98	Indiana	. . 1898

¹) The returns of several large cities (Boston, Worcester, Providence, Detroit, Hartford, New Haven and Indianapolis) are included in the statistics of these states.

CITIES

New York city ¹	. 1894-98	Reading	. . 1894-98
Chicago	. . 1894-98	Hudson co., N. J.	1894-98
Philadelphia	. . 1894-98	Cincinnati	. . 1894-97
Pittsburg	. . 1894-98	St Louis	. . 1894-97
Cleveland	. . 1894-98	Baltimore	. . 1894-97
New Orleans	. . 1894-98	Milwaukee	. . 1894-97
Minneapolis	. . 1894-98	Rochester	. . 1894-97
St Paul	. . 1894-98	Denver	. . 1894-96
Buffalo	. . 1894-98	San Francisco	. 1898
Toledo	. . 1894-98		

The results of the returns received from the foregoing states and cities are as follows :

Diseases	Reported cases	Registered deaths	Fatality (per cent)
Small-pox	9,222	2,385	25.8
Typhoid fever	69,758	13,284	19.0
Diphtheria and croup	195,783	44,411	22.7
Scarlet fever	127,847	9,211	7.2
Measles	217,755	6,424	2.8
Total	619,765	75,715	—

These results agree fairly well with those of the **English local government board** for the 8 years 1890-97, which showed a fatality for typhoid fever of 18.05%, for diphtheria of 23%, and for scarlet fever of 4.9%.

In the compilation of these figures it was found necessary to reject the returns of several entire states and cities, in consequence of manifest deficiency in the number of reported cases.

The **use of antitoxin for the treatment of diphtheria** became general in the early months of 1895, throughout the country. If, therefore, the returns for the year 1894 be treated separately it appears that there were 25,844 reported cases, and 7,654 deaths in that year, the fatality being 29.6%, while the fatality of the remaining years was only 21.6%.

1) Including the figures of the consolidated city for 1898.

Treating the year 1898 in the same manner, the fatality was only 20.5%, or the ratio of 31,494 cases to 6,471 deaths. In 2 states and 7 cities combined, having a total population of $4\frac{1}{4}$ millions, the fatality from diphtheria in 1894 was 29.7, and in the same places in 1898 it was only 14.6, confirming the statement that the diphtheria fatality has been cut in twain since the general introduction of antitoxin treatment. It is also quite noteworthy that in several large cities, situated a thousand miles apart, the diphtheria fatality before 1895 was quite uniformly from 29 to 30%.

Another measure which has become general throughout the country is the adoption of a **regulation** by local boards of health **forbidding the practice of expectorating** in all public places, such as public buildings, railway stations, street cars and sidewalks. The result is a much more cleanly condition of such places, and will undoubtedly have a favorable effect on the prevalence of tuberculosis.

Isolation. The practice of requiring the separation from the community at large, of persons suffering with small-pox, has been recognized for many years, and those attacked with yellow fever have been dealt with in the same manner in later years, but it has not been till the past 20 years that the laws of the states have definitely provided for the separation of those who are affected with other infectious diseases.

For the purpose of facilitating the work of isolation and of preventing the access of persons from outside the dwelling, placards or flags are commonly attached to the house in some conspicuous place, in order to notify the community of the existence of infection.

Except in the case of small-pox, it is commonly the custom to permit the wage-earners of the family to continue their occupations, under proper restrictions as to disinfection, bathing and change of clothing.

It is now commonly the practice to require the isolation, either in their own dwellings or in hospitals provided for the purpose, of persons suffering with small-pox, diphtheria and

scarlet fever, and also the exclusion from school of scholars suffering with the same diseases, and of other scholars living in the same family with pupils so suffering. Isolation is also applied to cases of measles, and also in a less rigid manner to typhoid fever and whooping-cough.

— *Isolation hospitals.* The practice of providing special hospitals for the treatment of persons suffering with infectious diseases has not become so wide-spread in the United States as it has in Great Britain. Pest-houses and small-pox hospitals have, however, existed from quite an early period, but on account of the extremely irregular occurrence of the disease, and of the need of keeping them closed much of the time, their equipment has usually been of a primitive character.

It is only within the past 5 or 10 years that cities have begun to recognize the need of special provision for this class of diseases. At the last meeting of the American public health association, November 1, 1899, one of the speakers stated that only 15 out of the 62 largest cities in the country had yet provided such hospitals for isolation purposes.

Among the examples of these useful establishments are the Willard Parker and Reception hospitals, and the Riverside hospital of New York city, the new isolation hospital at Chicago, the South department of the City hospital at Boston, and the isolation hospitals at Paterson and at Worcester.

With reference to the isolation of persons suffering with tuberculosis, a similar want of adequate provision by public authority is manifest, but a general awakening on this subject is now taking place. Provision has been made in several states as shown by the following list, mostly by private authorities.¹

Alabama	The Hygeia at Citronelle.
“	Convict camp for tuberculous prisoners.

1) From Dr S. A. Knopf's *Pulmonary tuberculosis and its treatment in special institutions, etc.* Philadelphia 1899.

Colorado	The Home at Denver, 4600 feet above sea level.	
"	Glockner sanitarium at Colorado Springs, 6000 feet above sea level.	
"	Colorado sanitarium at Boulder, 5300 feet above sea level.	
Illinois	Sanitarium at Chicago. Society incorporated.	
"	Cook county hospital for consumptives.	380 beds.
"	Hospital for consumptives, Chicago.	
Maryland	Hospital for consumptives, Baltimore.	
Massachusetts	Sanitarium, Sharon.	15 beds.
"	Consumptives' home, Grove Hall, Boston.	100 beds.
"	Free home for consumptives, Dorchester, Boston.	125 beds.
"	State hospital, Rutland, 1200 feet above sea level.	200 beds.
New Mexico	Sanitarium at Chico Springs.	
"	Latta sanitarium, East Las Vegas.	15 beds.
"	Ladies' home sanitarium, East Las Vegas.	16 beds.
"	St Anthony's sanitarium, East Las Vegas.	
"	U. S. government sanitarium at Fort Stanton.	
New York	Adirondack sanitarium, Saranac Lake, 1750 feet above sea.	100 beds.
"	Loomis sanitarium, Liberty, New York, 2200 feet above sea level.	80 beds.
"	Loomis hospital for consumptives, New York.	12 beds.
"	Seton Hospital, Spuyten Duyvil.	160 beds.
"	Sanitarium Gabriels, Paul Smith's.	50 beds.
"	Hill Crest, Santa Clara.	

New York	Brooklyn home for consumptives, Brooklyn.	92 beds.
"	St Joseph's hospital, New York city.	350 beds.
"	Montefiore sanitarium, Bedford.	15 beds.
"	Pasteur sanitarium, Tuxedo.	30 beds.
North Carolina	Asheville sanitarium, Asheville.	75 beds.
"	Winyah sanitarium, Asheville.	
Pennsylvania	Hospital for diseases of lungs, Chestnut hill, Philadelphia.	40 beds.
"	Hospital for diseases of lungs, 411 Spruce st., Philadelphia.	
"	Rush hospital for consumptives.	40 beds.
"	Sanitarium at Whitehaven.	
Texas	Sanitarium at White Gables.	

The legislature of New York has also appointed a commission to consider and report on the same subject, and a similar movement is on foot in Michigan.

Sir Richard Douglas Powell says of this excellent class of establishments :

Their usefulness, however, in my judgment extends far beyond the immediate purpose for which they are proposed. Lessons in self-management are learned by those who sojourn for a time in such sanatoria ; habits of self-discipline and attention to hygienic laws are acquired which are of much importance to those afflicted with consumption, and which have a favorable influence on prophylaxis ; and these persons when they pass again into the general community become centres of instruction in domestic hygiene.

Disinfection. The methods employed for disinfection, after the occurrence of infectious diseases, in the United States, have been very much the same as those in use in the different countries of Europe, specially since the very important investigations of Prof Koch, upon the value of the different substances used for disinfection, were made public. Apparatus for steam disinfection has been introduced in the largest cities for the disinfection of movable material, and similar

apparatus is in use in connection with many public institutions, isolation hospitals, and also at the different quarantine stations in sea-port cities.

Within the past three years or more the use of **formaldehyde**, by means of various forms of apparatus, has very largely superseded the use of sulphurous acid for the disinfection of closed apartments.

(*Vaccination.* **Laws relating to vaccination** were first enacted during the first decade of the century, and have been followed by various amendments and limitations from that time till the present. One of the most efficient laws relating to this subject, is that which exists in many of the states, requiring that unvaccinated children shall not be admitted to the **public schools**.¹

While there are compulsory laws in some states, it can not be said with truth that such laws are thoroughly enforced, to the extent of securing the vaccination of the entire population over 2 years of age, as is done, for example, throughout the German empire.

The **vaccinated portion** of the inhabitants of the United States may be estimated at not far from 90% of the whole, and the re-vaccinated portion at probably 50%. But this unvaccinated contingent of 10% (usually composed of children under 5) and the larger percentage of adults who have only submitted to primary vaccination, always affords an opportunity for a rapid spread of an epidemic.

The **production of vaccine lymph**, as well as that of anti-toxins, in the United States, is, unfortunately, largely in the hands of private parties, but the tendency in the past 10 years has been very decidedly in the direction of improvement, and antiseptic methods have been introduced, together with new appliances intended to secure the production of a pure and reliable lymph.

Glycerinated lymph is largely taking the place of the older forms, and humanized lymph is now but little used.

1) See *Wood's reference handbook*. v. 7. p. 554.

QUARANTINE

The measures existing in the United States for **preventing the introduction of infectious diseases** from other countries into the United States, through its principal sea-ports, are provided chiefly by laws enacted by those states which are on the sea-coast, and by certain statutes of the general government which confer authority for inspection on the marine hospital service, a department of the United States treasury (act of February 15, 1893).

By this act the chief official of this department is required to examine the quarantine regulations of state and municipal boards of health, and to cooperate with these authorities in preventing the introduction of disease from abroad, as well as from one state to another (act of March 27, 1890). United States officers in foreign ports are also required to publish regulations for securing the best sanitary condition of vessels, cargoes, passengers and crews departing for the United States.

The topics which are treated in the United States quarantine regulations are :

The inspection of vessels with the passengers and crews.

Diseases quarantinable. These are cholera, yellow fever, small-pox, typhus fever and leprosy¹.

Requirements at quarantine. Nature of infected vessels; disinfection of vessels and cargoes, and of personal effects of crew and passengers; detention of passengers, and measures to be taken on the Mexican and Canadian frontiers.

It is worthy of note, with reference to **Asiatic cholera**, that notwithstanding its frequent prevalence in transatlantic countries, it has never gained a foothold in the United States since 1873, while, previous to that date, outbreaks had usually followed every great European epidemic.

The first instance on record of the enforcement of marine quarantine in the United States, was the detention of a vessel which arrived at Philadelphia, from England, in April 1728.

1) To these may now be added bubonic plague.

This ship, the Dorothy, was ordered not to come "nearer than one mile to any of the towns or ports of this province; that the master or owners do not presume to land any goods, passengers, or sailors at Philadelphia without license, under penalty," provided in an act of 1700. The sheriff was required to provide a convenient place, at a distance, for the reception of persons still sick on board, that proper care be taken for their recovery.¹

The maintenance of an efficient quarantine is relatively more important in the United States, as compared with other countries, in proportion to the preponderance of the factor of immigration.

The necessity, also, of maintaining such quarantine more stringently at the present day than was required in earlier years, is due to a decided change in the quality of the immigration.

The total number of immigrants into the United States from 1820 to 1895, inclusive, was 18,480,951, and this number constituted nearly one third of the total increase of the population during the same period.

Gen. F. A. Walker in commenting on this subject, in 1896, said :

Fifty, even 30 years ago, there was a rightful presumption regarding the average immigrant, that he was among the most enterprising, thrifty, alert, adventurous, and courageous of the community from which he came. It required no small energy, prudence, forethought, and pains to conduct the inquiries relating to his migration, to accumulate the necessary means and to find his way across the Atlantic.

To-day the presumption is completely reversed. . . . So much have the rates of railroad fares and ocean passage been reduced, that it is now among the least thrifty and prosperous members of any European community that the emigration agent finds his best recruiting grounds.²

In the 10 years 1841-50, fully 65% of the European immigrants coming to the United States were natives of Great

1) *Proceedings* of third national quarantine and sanitary convention held at New York city, April 1859. p. 280.

2) *Atlantic Monthly*, June 1896.

Britain, but in the 10 years 1880-90 this class constituted only 31% of the whole, and those from Hungary, Russia, Poland, Armenia and Italy had greatly increased. Of the former class, arriving in 1891, not more than 8% were illiterate, while 51% of the immigrants from the southern countries of Europe, chiefly from Italy, Poland and Hungary, were illiterate. (This refers to the illiteracy of the immigrants, and not to that of the countries in general from which they came.) It is among this class, herding together in the large cities, and utterly ignorant of the methods of avoiding infection, that communicable diseases are found to spread with the greatest rapidity; and it is this class chiefly, which has brought such diseases as small-pox, cholera, typhus and bubonic plague¹ to the threshold of the United States. Fortunately, however, in most instances efficient quarantines have prevented their introduction beyond the ports of entry at which they arrived.

In most of the states on the Atlantic seaboard, the state laws give authority to the sea-port cities and towns in those states to carry out the provisions of the quarantine acts. In other states, specially those bordering on the gulf of Mexico, this authority is given to the state boards of health.

The **quarantine and inspection stations** which are conducted, either by national, state or local authorities are 120 in number, of which 81 are on the Atlantic coast, 22 (including Key West) are on the gulf of Mexico, and 17 are on the Pacific coast.

Several of these ports are of very little importance, in some instances no arrivals of vessels from foreign ports being reported during an entire year.

By far the most important station as a quarantine port is that of New York, since the arrivals of vessels at that station from foreign ports may be counted annually by thousands, and the number of immigrants by hundreds of thousands.

The equipment of this station consists of a boarding station, with the necessary offices for the health officer of the port

1) A ship infected with this disease arrived at the port of New York, in November last.

and his assistants, a sufficient anchorage ground for incoming vessels, two large and powerful steam-tugs for boarding facilities, apparatus and steamer for disinfection of vessels, and for bathing immigrants and disinfecting their personal effects, a detention and disinfection station on Hoffman island, an artificial island of 8 acres, having hospital buildings for the accommodation of 200 patients, a morgue and crematory, and all necessary appliances for hospital treatment of quarantinable diseases.

The following statement of the board of health of Florida, in regard to the management of maritime quarantine, appears to present a reasonable view of the matter so far as concerns the seaboard cities :

The maritime sanitation stations operated by the state of Florida through the state board of health have each been carefully managed throughout the year in the minutest detail to prevent the introduction of epidemic contagious diseases into the state, and at the same time foster and encourage the increasing commerce and travel coming to the state from foreign ports. This has been no easy task, for it is recognized, and the fact has been emphasized repeatedly by the board and its executive officer, that the only certain protection against disease introduction is non-intercourse with infected places. The demands of trade, however, consequent upon the development of the state, have made it impossible to maintain this policy. Should an exclusive system be attempted, there will most certainly follow clandestine intercourse, and any intercourse not surrounded by rational and judicious restrictions would inevitably prove to be a source of greater danger to the lives and health of the people of Florida. By careful inspection of each vessel, and its personnel, which arrives from foreign ports, the fumigation of certain vessels, together with the disinfection of anything which may possibly act as carriers or producers of disease, and the exclusion of persons from endemic or epidemic centers, non-immune to contagious disease, the board has thought to minimize the danger of disease introduction by way of the sea, and to provide a rational and ample protective system to the people of the state. The Florida system of quarantine, or contagious epidemic disease prevention, has obtained success in preventing epidemics by promptly surrounding those cases of contagious disease which have occurred, by inspiring confidence on the part of the citizens of the state in the sufficiency of the methods followed, by discouraging all exhibitions of fear — making panics impossible — and by securing freedom of movement and uninterrupted commercial relations within the state lines.

For 8 years under the operation of this system Florida has been free from epidemics of any kind, although maintaining bi-weekly communication with Havana throughout the year, and with other infected ports as well, and was enabled during the past fall when yellow fever was prevalent in neighboring states, with attendant confusion, panic and interrupted and almost entire destruction of trade, to practically exclude the disease from the state, and to maintain uninterrupted all kinds of travel within the state lines. This freedom from excitement and from commercial and personal discomfiture has, it is believed, been appreciated by the people of Florida, being manifest in the confidence exhibited in the constituted health authorities of the state to successfully deal with the question specially delegated to them by the constitution of the state, by the various legislative enactments. . . . The quarantine fund, however large by accumulation, can not be used for domestic sanitary needs, *i.e.* internal health measures, but must be held and expended *only* for purely maritime purposes, in preventing contagious epidemic disease introduction by vessels, or through marine agencies.

Ninth annual report of the state board of health of Florida. p. 27.

FOOD AND DRUG INSPECTION

In a great producing country, from whose granaries and cattle regions large stores of food are annually sent abroad to other lands, the inducements to adulterate and to cheapen food products do not appear to be so urgent as in those more densely settled countries, where food must necessarily be imported in order to sustain the population.

It was not, therefore, till a comparatively recent period that public attention was directed to this subject. Occasional papers, giving the results of local inspections in different parts of the country, were published in the reports of state boards of health between 1870 and 1880, and in 1879 some very lively discussions were provoked on this subject, in which very exaggerated and unfounded statements were made. The old stories in relation to the presence of sand in sugar, of chalk and calves' brains in milk, and burnt liver in coffee were reproduced, and this vigorous discussion finally resulted in the offer of a prize of \$1000 by the National board of trade for the best essays on this subject, embodying a draft of a proposed law for the prevention of food adulteration. The prize was offered by an advertisement which first appeared in the columns of the Sanitary Engineer of February 1, 1880, and 3 prizes were awarded. The first prize was granted to Prof G. W. Wigner, secretary of the British society of public analysts. The bill which he proposed in this essay became the basis of most of the general food acts which were enacted in many of the states since that time.

The first state which took definite action on the subject was New York, the law having been passed June 15, 1881. That of Massachusetts followed in 1882, and several other states have enacted similar laws in the succeeding years. In New York and in Massachusetts the execution of this law was entrusted to the state boards of health, while in other states, notably in Ohio and New Jersey, it has been placed in the hands of a special food commission, clothed with similar

powers and authority. Several states also have dairy commissioners appointed to take charge of the inspection of milk and other dairy products.

In some of the states where an adequate appropriation has been made for the execution of the law, it has been enforced, and the results have been all that could be expected. Thousands of samples have been collected and examined, and many offenders have been brought to trial and convicted, while fraudulent and dishonest preparations have been driven across the border into states which have made no provision against the evil.

In 1881, Prof Wigner, the author of the food statute, in a paper on this subject used the following language :

Adulteration does exist, it is a serious evil, and must be grappled with and effectively cured or suppressed, but exaggerated statements do not represent the real state of the food supply in any civilized country. The adulteration of the 19th century is cheating the consumer's pocket, but is not poisoning him. By all means, use every effort to prevent the fraud which does exist, but do this by fair and open statement of the real state of things, and the application of an effective remedy, instead of by manufacturing statements of poisonous admixtures that are unknown, in order to find employment for alarmist chemists and microscopists.¹

Several attempts to secure national legislation on the same subject have been made, notably that of 1892, and the Brosius bill of the present year. The first of these bills, that of 1892, was ably supported by Hon A. S. Paddock of Nebraska. He presented a letter from H. W. Wiley, chemist of the department of agriculture, showing that the expense of a general system of food inspection for the country at large would not exceed \$100,000 a year. The movement was ably supported by petitions from all parts of the country, but failed to pass. It is to be hoped that better success will attend the present attempts to secure similar legislation.

The following closing words of senator Paddock's argument

1) *Sanitary engineer*, May 15, 1881. p. 276.

are well worth repeating here. Speaking of the necessities of the wage-earning masses, he said :

These, Mr President, are the men and these the women and children for whom, before all others, I make this appeal. If you could save to these the possible one third of the nutritious element of their food supplies which is extracted, to be replaced by that which is only bulk, only the form and semblance of that of which they are robbed by the dishonest manipulator and trader, you would go a long way toward solving the problem of the laboring masses whether for them it is 'better to live, or not to live,' whether it is 'better to endure the ills they have, rather than to flee to those they know not of,' that lies beyond in the realm of governmental and social upheaval and chaos.

In addition to the inspection provided by the states, the large cities also usually provide for inspection of milk and other articles of food offered for sale in their own limits.

In several of the states **dairy commissioners** have also been appointed to have charge of the execution of the laws relating to milk and milk products. Every large city in the United States also has a **milk inspector**, who is usually clothed with the necessary power to enter complaints at court against offenders. In addition to these, there are also in some of the cities special **inspectors of animals, provisions and markets**, acting either under the direction of the health department or of some other bureau.

The milk supply of New York city is obtained from 5 states, New York, New Jersey, Pennsylvania, Connecticut and Massachusetts. The daily average in 1896, being 728,612 quarts (661,580 litres) exclusive of cream and condensed milk. Over 80% of this milk is produced in New York state, nearly the entire supply being brought to the city over 9 or 10 different railway lines.

The milk supply of Boston is produced in the states of Massachusetts, Maine, New Hampshire and Vermont, the daily average supply amounting to about 240,600 quarts (218,465 litres) estimated to 1900.

The milk supply of all the large cities of the Union is subject to daily inspection by competent officials, for the purpose of preventing adulteration, and measures are being adopted

in some of the large cities to secure an improved condition of the producing dairies, both as to the health of the animals, and the conditions under which they are kept.

Meat inspection. An act of the 51st congress of the United States, dated August 30, 1890, ch. 839, provides for an **inspection of meats for exportation**, and prohibits the importation of certain adulterated articles of food. Its principal provisions are the following:

The inspection of salted pork and bacon intended for export, to determine whether it is wholesome, sound, and fit for human food.

Inspection to be made where the meat is packed.

Adulterated food and drugs and liquors injurious to health prohibited, and suspension of imports may be proclaimed by president.

Unjust discrimination of foreign states provided against.

Importation of diseased cattle prohibited; quarantine and slaughter of infected animals provided for.

Live animals for export to be inspected, and the diseased not allowed to go out of the country.

A later act of the same congress passed March 3, 1891, also provides for the inspection of cattle intended for export, and of those whose meat is to be exported; it also provides for inspection before slaughter, of animals intended for interstate commerce. Post mortems are also provided for.

Penalties are also imposed for forging or counterfeiting marks and tags.

The transport of unsound carcasses is forbidden.

The provisions of this law are not to apply to animals killed on the farm.

The appointment of inspectors is provided for.

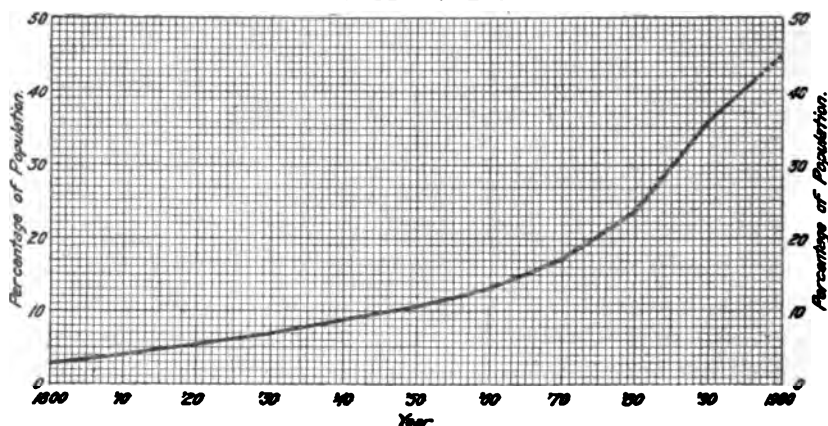
PUBLIC WATER-SUPPLIES

In no department of public hygiene has more **rapid progress** been made, in the United States, than in the introduction of public water-supplies in cities and towns.

In the last century (the 18th) very few municipalities had taken any action toward introducing supplies of pure water for the use of the inhabitants, private wells, springs and cisterns for collecting the rainfall being the principal sources of supply. The whole number of towns supplied before 1800 was 16, of which number, 1 was in New Hampshire, 5 in Massachusetts, 1 in Rhode Island, 2 in Connecticut, 3 in New York, 1 in New Jersey, 1 in Pennsylvania and 2 in Virginia.

None had been introduced in states south of Virginia or west of Pennsylvania. All of these 16 supplies furnished water to towns containing less than 150,000 inhabitants, or about 2.8% of the existing population at the beginning of the century.

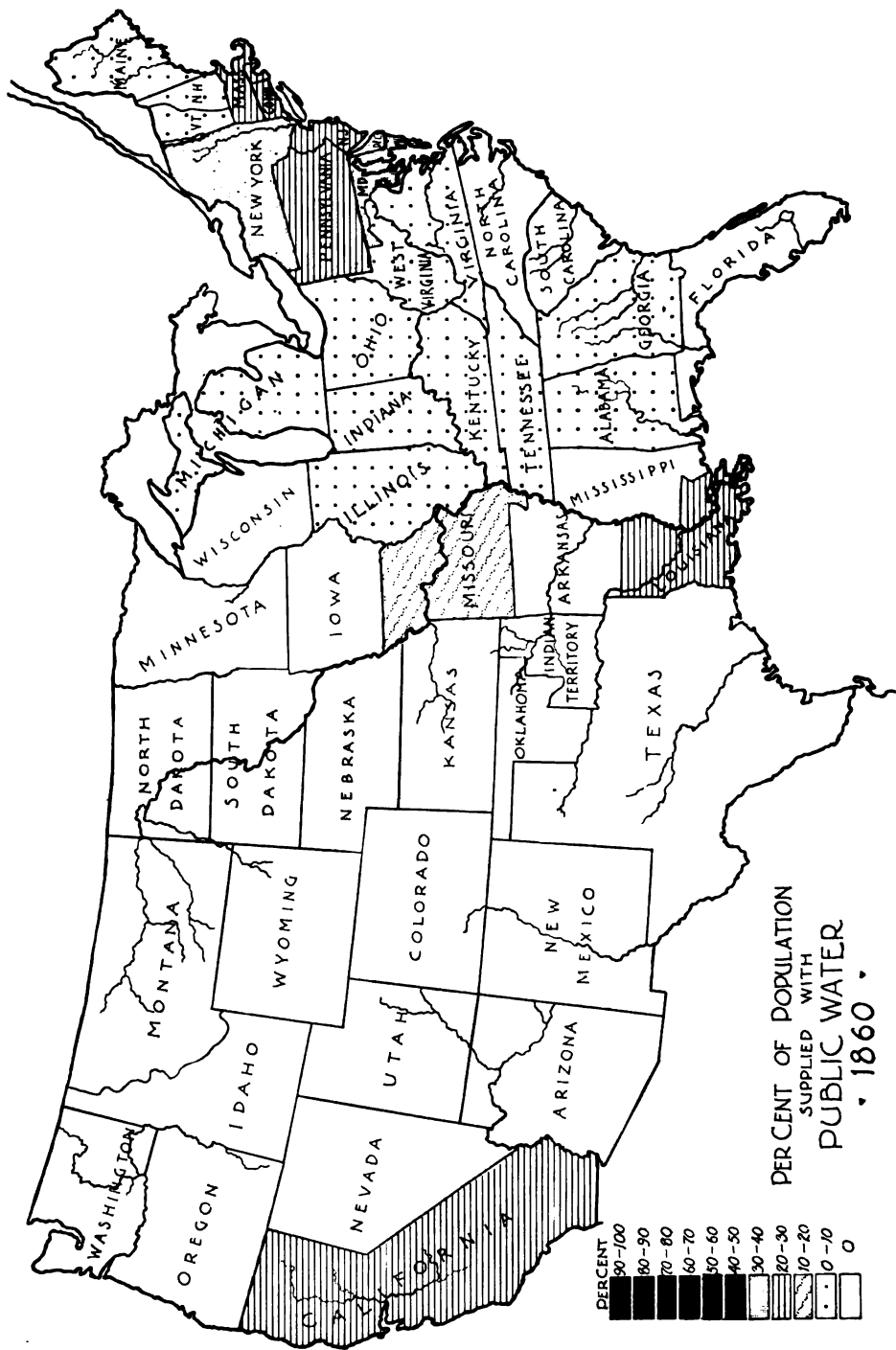
*DIAGRAM SHOWING THE
PERCENTAGE OF POPULATION IN THE UNITED STATES
LIVING IN TOWNS SUPPLIED WITH
PUBLIC WATER.*

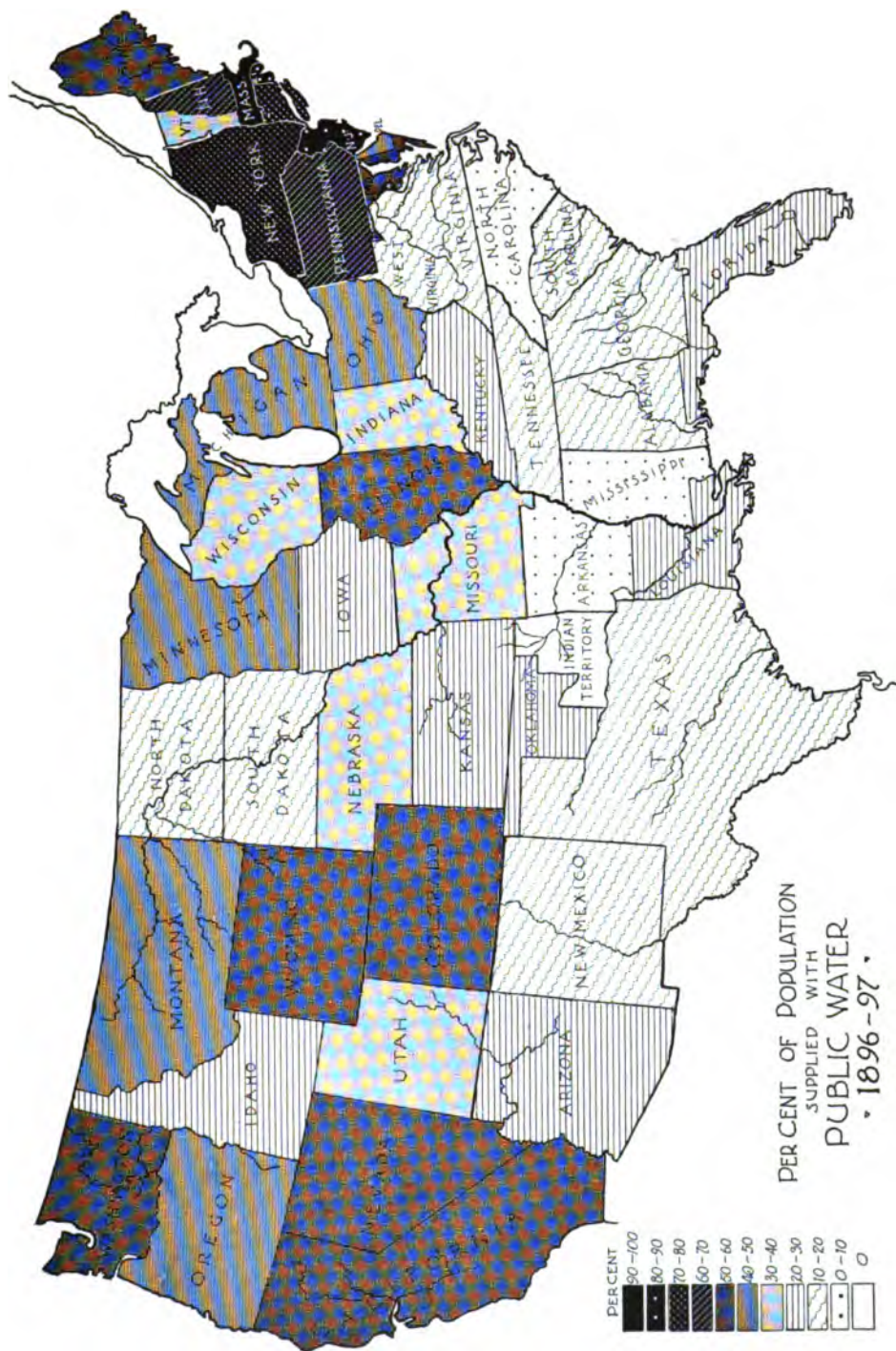


The dotted line (1896-1900) indicates the probable increase to the close of the century.

In 1850, 50 years later, only 83 public water-supplies had been introduced, supplying cities having a population of about 2,450,000, or 10.6% of the total by the census enumeration of that year. In 1860 the population supplied was only 13% of the total, in 1870, 17%, and in 1880 it was 11,809,000, or 23.5%. In 1890 the total number of supplies had increased to 2074, and the population supplied was 22,470,000, or









35.9%. In 1896, according to the Manual of American water works (last edition 1897), the number had increased to 3196, and since, in many instances, a single plant furnished water to several municipalities, the total number of cities and towns thus furnished, either partially or wholly with public water-supplies, was 3942, the population of these places (by the census of 1890) being 41.6% of the population of that year. The rapid increase of this important work in some of the states is marvelous. Only 5 cities west of the Mississippi river were furnished with public water-supplies before 1860, but in 1896 there were 1011 cities and towns having public water-supplies west of the Mississippi, and many more were in contemplation. In the 2 states of Nebraska and Kansas alone there were only two existing public water-supplies previous to 1880, while 180 have been introduced in the same states since 1880, most of them being in towns of less than 3000 inhabitants.

During the last quarter of a century, several very **extensive schemes for supplying water** to large populations have been inaugurated. Among them may be named the extension of the water system of New York city, by the enlargement of its tributary water-shed, and the construction of the Croton dam, with the Croton lake and the Jerome park reservoirs. The enlargement and improvement of the Chicago water-works, by the extension of the water intake to a distance of 4 miles into Lake Michigan, this scheme having become necessary in consequence of the increasing pollution of the water-supply by the drainage of the city. A new supply was also planned for the metropolitan district about Boston, and is in process of construction. This scheme will afford an ample supply for a population of about 2 millions when completed, and is capable of further expansion.

Greater attention has also been given during the past 20 years to the subject of **water purification**, and measures have been undertaken, and in some instances completed in several cities, for the purification of their water-supplies by means of

filtration. Among these special mention may be made of the city of Lawrence, Mass., which had for about 20 years drawn its supply directly from a river which was polluted by the sewage of several hundred thousand inhabitants living above the intake of the water-works. Typhoid fever had increased in the city to alarming proportions. But after the introduction of the filtration system, the death-rate from this disease was reduced to less than one tenth of its former size, and has continued to diminish from the year after such introduction of the new filtering plant. Similar measures are being taken in other American cities.

The following table presents the statistics showing the growth of public water-supplies in the United States during the past century:

GROWTH OF THE WATER-WORKS IN THE UNITED STATES

Compiled from the Manual of American water works

(Edition of 1897)

Years	No. of supplies introduced	Years	No. of supplies introduced
Before 1800	16	1890	207
1800-1809	11	1891	161
1810-1819	7	1892	182
1820-1829	11	1893	201
1830-1839	20	1894	259
1840-1849	26	1895	302
1850-1859	51	1896 and part of 1897	293
1860-1869	99		
1870-1879	358		
1880-1889	1268		

The following table presents by groups the percentage of the population supplied with public water in each of the states in the Union in 1860 and in 1896:

PER CENT OF POPULATION SUPPLIED WITH PUBLIC WATER IN
1860 AND 1896-1897

1860

District of Columbia	81.4	80 to 90 %
o		40 to 80 %
New York	34.7	30 to 40 %
Maryland	31.3	
Rhode Island	29.0	20 to 30 %
Pennsylvania	27.0	
New Jersey	26.8	
Massachusetts	24.3	
Louisiana	23.8	
Connecticut	22.7	
California	20.1	
Delaware	18.9	10 to 20 %
Missouri	13.6	
Ohio	9.6	0 to 10 %
New Hampshire	6.7	
Illinois	6.4	
Kentucky	6.2	
Michigan	6.1	
West Virginia	4.7	
Virginia	4.4	
Georgia	3.3	
Tennessee	1.7	
Vermont	1.4	
Maine	1.2	
Indiana	0.7	
Alabama	0.4	

Arizona	.	.	.	} 0 %
Arkansas	.	.	.	
Colorado	.	.	.	
Florida	.	.	.	
Idaho	.	.	.	
Iowa	.	.	.	
Kansas	.	.	.	
Minnesota	.	.	.	
Mississippi	.	.	.	
Montana	.	.	.	
Nebraska	.	.	.	
Nevada	.	.	.	
New Mexico	.	.	.	
North Carolina	.	.	.	
North Dakota	.	.	.	
Oklahoma	.	.	.	
Oregon	.	.	.	
South Carolina	.	.	.	
South Dakota	.	.	.	
Texas	.	.	.	
Utah	.	.	.	
Washington	.	.	.	
Wisconsin	.	.	.	
Wyoming	.	.	.	

1896-97

Massachusetts	90.3	90 to 100 %
Rhode Island	89.7	80 to 90 %
District of Columbia	88.2	
New Jersey	82.0	
Connecticut	73.5	
New York	72.3	70 to 80 %
New Hampshire	66.1	60 to 70 %
Pennsylvania	66.0	
California	57.7	50 to 60 %
Colorado	57.0	
Wyoming	55.3	
Nevada	52.6	
Maine	52.1	
Washington	50.6	
Illinois	50.3	
Maryland	50.1	
Delaware	46.4	40 to 50 %
Ohio	42.9	
Michigan	41.8	
Minnesota	41.0	
Montana	40.2	
Oregon	40.2	

Utah	39.8	} 30 to 40 %
Vermont	39.3	
Wisconsin	36.7	
Nebraska	35.9	
Missouri	32.6	
Indiana	30.5	
Arizona	26.6	} 20 to 30 %
Oklahoma	26.6	
Louisiana	26.3	
Kansas	24.3	
Iowa	24.1	
Florida	22.3	
Idaho	22.2	} 10 to 20 %
Kentucky	21.5	
Texas	19.8	
Virginia	18.9	
New Mexico	17.4	
South Dakota	16.4	
Georgia	15.6	
Tennessee	15.2	
West Virginia	13.5	
North Dakota	12.5	
Alabama	11.5	} 0 to 10 %
South Carolina	10.6	
Arkansas	7.7	
North Carolina	7.6	
Mississippi	6.3	

The charts between pages 36 and 37 also illustrate the same groups in a graphic manner.

See also the statistical table in appendix I, columns 7 and 8.

SEWERAGE AND SEWAGE DISPOSAL

Closely related to the subject of water-supply is that of **sewerage** and **sewage disposal**, since the sewage consists of the water of the public water-supply, with the addition of such household filth and manufacturing wastes as may be added to it by the population. Both are sanitary necessities of great importance, but the public water-supply is usually introduced long before serious thought is given to the question of sewerage. It is for this reason that the percentage of the population living in sewered towns is very much less than that of the towns furnished with public water-supplies.

The percentage of people living in sewered towns in the United States in 1896 was 28.7¹, while the percentage of the total population living in towns having public water-supplies was 41.6.² The number of cities and towns which had introduced systems of sewerage³ in 1896 was 822, or less than one fourth of the total number of cities and towns furnished with public water-supplies.

The methods of disposal are various, and are necessarily

1) This figure is probably incorrect for the following reasons: the essential information for an authoritative statement on this subject was compiled from the manual of American water-works, this being the only work in which such information could be found with a fair degree of completeness. The information in that work was obtained by means of circulars issued to the authorities having the water-works throughout the country in charge, and may be relied on as accurate so far as water-supplies are concerned, but that which applies to sewers was obtained from the same water officials. In very many municipalities the water-supplies and sewerage systems are under the control of separate authorities. Hence, information obtained from one department relating to another department can not be considered as accurate as that which it provides relating to its own affairs.

In two states it was found possible to correct the percentage given in the table, by means of lists existing in those states. For example, in Massachusetts, the addition of towns and cities having sewers, not mentioned in the manual, increases the percentage from 63.3 to 73.5, and in New Jersey from 63.6 also to 73.5. It therefore seems probable that from 5 to 10%, or more, may reasonably be added to the figures given for each of the states in the table on page 43. We have preferred to present in the table only such figures as could be compiled from published statements, without attempting to give approximate estimates.

2) See chart facing page 43, and table on the same page for further details.

3) The term "system of sewerage" is here intended to apply to those systems which collect household sewage, but not to those which are constructed to receive storm water only.

dependent upon the conditions and circumstances which prevail in each case.

In the case of cities situated on the sea-coast, or in large bays, harbors or tidal estuaries, the sewage is usually discharged into sea-water without treatment. This is the method pursued at Portland, Salem, Lynn, Gloucester, Boston, Providence, New York, Baltimore, Charleston, Savannah and San Francisco. The greater portion of the sewage of Boston is retained and only allowed to discharge on each outgoing tide, while that of the remainder of the city and of 14 neighboring cities and towns is discharged into deeper water continuously.

Most large cities situated upon the great lakes and rivers discharge their sewage directly into those bodies of water, as at Philadelphia, Cincinnati, St Louis, Albany, Minneapolis, St Paul, Washington, Buffalo, Detroit, Richmond, Chicago, Milwaukee and Cleveland. In some instances, these bodies of water are the sources of water-supply of cities, and are liable in consequence of their proximity, either at lower points on the same stream or at some point near the outlet of sewers on lakes or ponds, to be seriously polluted. It was this condition which has caused serious epidemics of typhoid fever at Chicago, Philadelphia, Lowell, Lawrence, Newburyport and other cities, in some of which radical changes in the methods and sources of supplying water have been introduced as a consequence.

Disposal upon land has been conducted with entirely satisfactory results in several cities and towns, but the number of such places is not large.

Chemical precipitation is also conducted in a few places, the most notable instance being the city of Worcester, having a population of about 100,000. The sewage of this city had, till 1890, been discharged without treatment into a tributary of the Blackstone river, to the annoyance of towns situated below the city. By an act of 1886, the city was required to remove its sewage from the river within four years, and the precipitation method was therefore adopted.

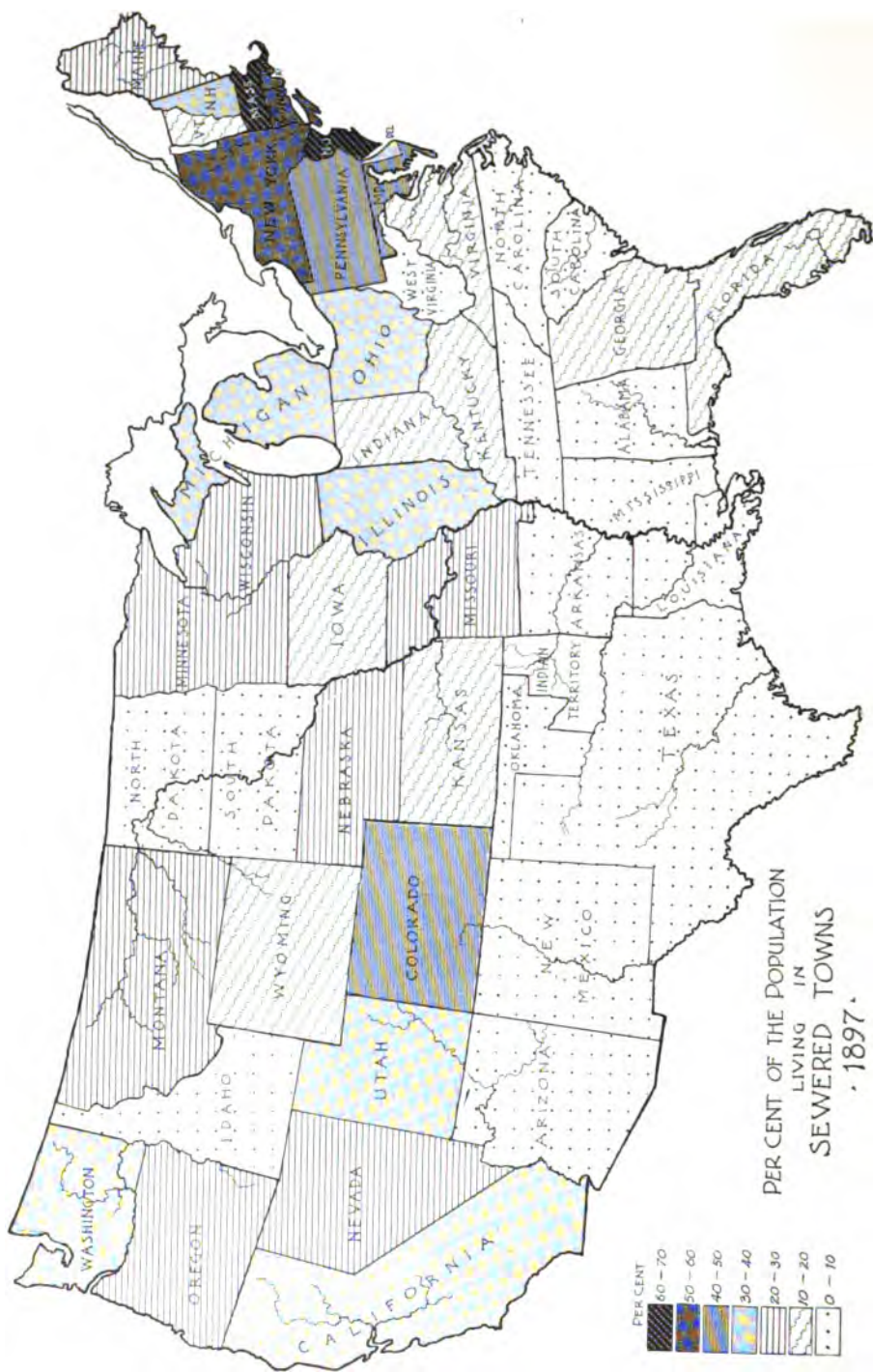
One of the most extensive schemes for sewage disposal, in the United States, is that which is now being completed at Chicago, having for its object the entire removal of the city sewage from lake Michigan, and its transfer to the Illinois river and thence to the Mississippi, so that the sewage which formerly passed into the lake and thence went to the gulf of St Lawrence, now finally reaches tide-water at the gulf of Mexico.

This great drainage canal serves 2 important purposes. It provides an outlet for the sewage of the city, and at the same time furnishes a water-way from Lake Michigan to the Mississippi river. This extensive undertaking was an absolute necessity. The city received its water-supply from the lake, and at the same time emptied nine tenths of its drainage into the same lake. Temporary measures for relieving this condition were adopted, by extending the intake of the water-works to a distance of 4 miles from the shore, with the effect of reducing the death-rate from typhoid fever appreciably. But even this distance was insufficient, and the death-rate from this cause has again risen.

Work upon the great canal (28 miles in length) was begun in 1892, pursuant to an act of the Illinois legislature of 1889, and the work is now rapidly approaching completion. When finished, the entire sewage of Chicago, diluted with the water of Lake Michigan, will be discharged through this canal.

One of the most useful statutes yet enacted, with reference to the subject of water-supply and sewerage, was that which was passed by the Massachusetts legislature in 1886, entitled an "Act to protect the purity of inland waters." The annual appropriation specially provided for carrying out the provisions of this act, in recent years, has been \$30,000. Since the operations of the state board of health under this act have been a matter of frequent comment in medical, sanitary and engineering journals, the writer takes the liberty of quoting the statute in full in appendix III.

Under this act it will be seen that the duties of the board



are chiefly to examine, to advise and to report, and in cases of omission to comply with the laws in regard to pollution of water-supplies and inland waters, the board is authorized to inform the attorney-general.

Under its provisions the board has been enabled to maintain a careful supervision over the systems of water-supply throughout the state, has given its official advice to municipal authorities, corporations and individuals in 660¹ instances, has established and maintained an experiment station, for the purpose of carrying out experiments in sewage purification and water filtration, and has examined many samples of water, sewage, sand, gravel and other soils, chemically, bacterially and mechanically, during the period in which the act has been in operation. The advantages derived from the operation of this act are generally acknowledged, both among the citizens of the state and elsewhere.

PER CENT OF THE POPULATION LIVING IN SEWERED TOWNS

(1896-97)

States		States	
New Jersey . . .	63.7	Wyoming . . .	19.3
Massachusetts . . .	63.3	Indiana . . .	17.9
	} 60 to 70 %	Vermont . . .	17.1
New York . . .		Florida . . .	13.4
Rhode Island . . .	56.0	Kentucky . . .	12.5
Connecticut . . .	52.7	Iowa . . .	11.8
	} 50 to 60 %	Kansas . . .	11.4
Colorado . . .		Virginia . . .	10.9
Maryland . . .	42.6	Georgia . . .	10.2
Pennsylvania . . .	40.9		} 10 to 20 %
	} 40 to 50 %	Texas . . .	8.4
New Hampshire . . .		Tennessee . . .	8.1
California . . .	39.1	Alabama . . .	7.5
Delaware . . .	38.3	Oklahoma . . .	7.4
Illinois . . .	38.0	West Virginia . . .	6.2
Ohio . . .	32.6	Idaho . . .	6.1
Washington . . .	32.1	South Carolina . . .	5.5
Michigan . . .	30.1	Arizona . . .	5.3
Utah . . .	30.1	North Dakota . . .	4.5
	} 30 to 40 %	New Mexico . . .	3.6
Minnesota . . .		South Dakota . . .	3.1
Nevada . . .	27.6	Arkansas . . .	2.2
Maine . . .	26.3	North Carolina . . .	1.6
Oregon . . .	26.0	Mississippi . . .	1.0
Wisconsin . . .	25.8	Louisiana . . .	1.0
Missouri . . .	24.9		} 0 to 10 %
Montana . . .	23.1		
Nebraska . . .	22.6		

1) To the close of 1899.

SCHOOL HYGIENE, SUBJECTIVE AND OBJECTIVE

That which relates to the **health and comfort of the pupil** personally, and that which pertains to **his surroundings**. The number of children enrolled in schools in the United States in 1890, was 14,219,571 (U. S. census) and at the present date, January 1900, is probably about seventeen or eighteen millions. The majority of these is subjected to the influences attendant upon school life throughout several years of the adolescent, or rapidly growing period of life, an age when one's surroundings have a greater influence on his health, and consequently on his future condition, and to some extent on his length of life, than they do at later ages.

The **first schoolhouses** in the country were small, one-story, one-room buildings, with such ventilation as open fire-places furnished. Little or no regard was had for the important question of lighting, cubic air space, adaptation of seats to the ages of pupils, typography of school-books, or to the usual sanitary conveniences now considered as essential features of every well appointed schoolhouse. When open fire-places gave place to cast iron stoves heated with firewood, the conditions were even worse, for the only avenue for efficient ventilation, the fire-place, was then closed.

The transition from these structures (which are still in use in many rural districts) to the large **modern structures** having many schoolrooms, accommodating several hundred scholars in each, and provided with modern sanitary appliances, has been gradual, and has been brought about by the demands of the people, and by the frequent investigations of state and local boards of health, as well as by voluntary organizations of citizens interested in the public welfare.

Laws have also been enacted in several states, placing the sanitary supervision of schoolhouses under the control of definite authorities empowered to act, and to make or to cause to be made, such changes as are necessary to place these buildings in proper sanitary condition. In some states this

authority has been granted to boards of health, in others to the school authorities, and in others still to special state or district police officials.

On the other hand the pupil, considered subjectively, has received less attention than has been given to his environment. Not till the past 20 years have laws been enacted providing for the protection of the family and the community at large, from the influence of aggregating children together in close proximity, at an age when the susceptibility to infection is at its maximum.¹

The question of deciding whether particular scholars should be excluded from school, or whether the school should be closed altogether in case of an unusual prevalence of infectious disease, has usually been left to the discretion of the local authorities, but sometimes the latter procedure has been adopted only when endorsed or recommended by a state or central authority.

Physical training has in recent years been introduced in the schools of all large cities, and the tendency is to place this important branch in the hands of educated instructors. Unfortunately, military training, with its narrow methods of physical culture, has for a time, in many places, been allowed to supplant broader and more rational methods in the higher grades of schools. Time will undoubtedly provide the remedy for this error.

Medical inspection of schools. The plan of making regular medical inspections of the pupils attending the public schools, so far as the United States is concerned, was introduced by a communication from the board of health of Boston to the mayor and city council, in 1892. An appropriation was made, but the plan was not put in operation till November 1894, when a corps of 50 physicians was appointed for as many districts in the city. These inspectors were instructed "to visit the schools daily in the morning, and to examine all

1) An exception may be made to this statement in the single instance of the law existing in some states, providing for the exclusion of unvaccinated children from school, a measure which dates from a considerably earlier period.

pupils who complain, or appear to the teachers to be ill." If scholars were found showing symptoms of infectious disease, or were otherwise too ill to remain in school, the teacher was advised to send the pupil home. In the examination of throats, wooden tongue depressors are used, to be destroyed after each single examination.

These inspectors are also authorized to visit the homes of children thus found to be ill, and to see that proper precautions are taken at home for preventing the spread of disease.

During the 14 months, ended December 31, 1895, 16,790 pupils were examined, 10,337 of whom were found to be ill, and of these 77 had diphtheria, 28 scarlet fever, 116 measles, 28 chicken-pox, 69 pediculosis, 47 scabies, 47 mumps, 33 whooping-cough and 8 congenital syphilis. The remainder were suffering from a variety of other diseases, and many of them were found to be too ill to remain in school during the day.

A similar plan was adopted in New York city in March 1897, and measures have been recommended for its adoption in Chicago, Philadelphia, St Louis, Washington, Worcester, Fall River, Lowell, Brookline and Newton.¹

MUNICIPAL HYGIENE

The necessity of **public sanitation**, judiciously administered by some well-organized municipal authority, increases in proportion to the increase in density of the population. Hence every city and nearly every large town of 10,000 inhabitants or more, in the United States, now has its board of health, or health department, organized for the purpose of providing for the protection of the public health of the citizens living within the limits of such municipality.

For the smaller towns, villages and rural districts, which comprise at present the greater part of the population of the United States, the laws are much more variable.

¹) *Report of U. S. commissioner of education, advance sheets.* Washington, D. C., 1899. p. 1489-1511.

The board of health or health commissioners of cities are usually appointed by the city government, while those of the towns are more commonly elected by the people, in the same manner with other important local officers.

The principal duties of municipal boards of health are the following :

The management and control of infectious diseases, including notification, isolation, disinfection, vaccination, and the supervision of infectious disease hospitals.

The inspection and abatement of local nuisances.

The sanitary inspection of the food supply, and specially that of milk, provisions, and animals used for food.

Street cleaning.

The collection and disposal of ashes, garbage and refuse.

Tenement-house inspection.

Medical inspection of schools.

Supervision of foundlings, infant asylums and lying-in hospitals.

Inspection of plumbing.

Inspection of bakeries.

Inspection of barber-shops.

Registration of vital statistics, and supervision of burials.

Care of public bathing establishments.

Regulation of offensive trades.

Regulation of stables.

Supervision of the municipal water-supply, and the system of sewerage and sewage disposal.

Some of the foregoing topics have already received separate consideration in this monograph, and some of them are also frequently referred to special commissioners, acting independently of boards of health. This is usually the case with the city water-supply and the systems of sewerage.

Quite frequently, also, the cleaning of streets, and the collection of refuse is done by a special independent authority, and sometimes two or more of these functions are vested in a board of public works.

Local nuisances. The inspection and abatement of those unsanitary conditions which are liable to prove detrimental to the health, comfort and convenience of the citizens of any municipality, are among the chief duties of every local board of health.

For this purpose arbitrary power is usually entrusted to municipal boards of health, for the purpose of enabling them to deal promptly and decisively with local nuisances.

The following language of a judge of supreme court fitly expresses the duty of the local board of health in such matters :

Their action is intended to be prompt and summary. They are clothed with extraordinary powers for the protection of the community from noxious influences affecting life and health ; and it is important that their proceedings should be delayed as little as possible. Delay might defeat all beneficial results ; and the necessity of the case, and the importance of the public interests at stake, justify prompt action.

Offensive trades. Certain trades which are more or less productive of noxious and offensive odors, and hence are unusually annoying and injurious to persons living in the neighborhood, are often placed under the supervision of local boards of health by special laws. Slaughter-houses, rendering works, artificial fertilizer works, glue factories, tripe-boiling establishments and chemical works, constitute the principal works of this kind. If the local board of health neglects or refuses to apply the proper remedy in such cases, it occasionally becomes necessary for some other authority to act, either the state board of health, or a court of law.

It was on account of the serious nuisance caused in a rapidly growing district near Boston, by the business of slaughtering animals in private establishments, without regard to sanitary precautions, that a law was enacted in 1871, which gave authority to the state board of health to close such establishments, when the "public health, or the public comfort and convenience" required. Complaints were made against 23 of these places, the result of which was the formation of a corporation for the purchase of land and erection of

an abattoir, in which the business of slaughtering was conducted upon improved methods, and a large district was relieved of the public nuisance.

Street cleaning. The systematic cleaning of the streets and public places of cities is a subject of comparatively recent growth in the cities of the United States. The methods of administration, the appliances used, and the results accomplished, have undergone very decided changes in the line of improvement, and even to the casual observer visiting almost any large city after the lapse of 10 years or more, a great improvement is manifest.

A conspicuous example of thorough and extensive work of this character was that of the late Col Geo. E. Waring, who was appointed to administer this important department in the city of New York in 1895, and in a brief period wrought a radical improvement in the condition of the streets.¹

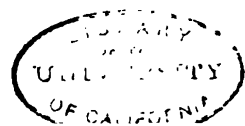
Disposal of refuse. The duty of providing for the collection and disposal of the garbage, ashes, waste-paper and domestic rubbish of cities is usually, though not always, performed by the department of street cleaning. To find a satisfactory method of collecting this material, of providing for its proper separation by the householder, and of its final disposal, is often a serious and perplexing question. Clean ashes are employed for the filling of new made land, but when mixed with putrescible garbage, as often happens, they must necessarily become a nuisance to the neighboring inhabitants. Garbage, when fed to swine and other animals, is a frequent cause of disease, as is abundantly shown by thorough investigation.

Hence, in some of the states, laws have been enacted restricting this practice.

In sea-port cities, it has been a common custom to tow such material out to sea, in barges so constructed as to admit of easily discharging their contents.

In some inland cities such material has frequently been

¹) *Street cleaning and the disposal of a city's wastes*, by Geo. E. Waring, Jr. New York, 1899.



treated by burying or by digging it in the soil, a method which necessitated the accumulation of offensive deposits during the winter.

In many cities it has been the custom to treat the perishable material either by destruction with fire, or by some process intended to utilize the products obtained, either by means of steam or by naphtha, the resulting products usually consisting of fats and fertilizers. For this purpose inventive genius has supplied many forms of destructors and rendering apparatus.

Public baths. **Public bathing establishments** have existed for many years in the principal sea-coast cities, and cities on the banks of large rivers, where open air and summer bathing is practicable. But all-the-year-round bath-houses under municipal control, in which hot and cold baths can be had at any time, either free or on payment of a very small fee, are yet but few in number, except in the largest cities. As an exception to this statement, may be mentioned the bath-house recently erected in the town of Brookline, Mass., which is a model in its way, and is furnished with all the necessary appliances for hot and cold bathing, swimming tanks, and opportunities for instructing the pupils of public schools, as well as others, in the art of swimming.

Plumbing inspection. Within a comparatively recent period, the business of **plumbing and drainage of houses** has been entrusted to the supervision of the local board of health, by the enactment of laws providing both for the registration, licensing and examination of plumbers, and the inspection of their work.

The action of these laws has wrought a very great change from the unsatisfactory conditions which had formerly prevailed.

Bakeries. In some states provision has been made by law for regular inspection of bakeries by local boards of health.

Tenement-house hygiene and inspection. The number of American cities in which the population has become so densely aggregated as to call for special measures to remedy the evils

attendant upon tenement-house life, is not large. By the census of 1890 there were only 11 cities in the United States having a population of more than 250,000 in each, but the rapid increase of the population in these cities, in recent years, has produced conditions in some of them, which approach those of Glasgow and London, and hence, measures for their relief are demanded. By an act of the legislature of New York of 1894, a tenement-house committee was appointed to investigate the tenement-houses of New York city. The report of this committee states that eight fifteenths, or a little more than one half of the population of New York city at that time, lived in "what are generally called tenement-houses, rather than apartment houses".¹

The death-rate of the infant population in these dwellings is much greater than that of children living in single houses. One of the chief causes of the higher death-rate is the existence of old and unsanitary buildings. In 1892, the Bureau of labor statistics of Massachusetts reported on the tenement-houses of Boston, and found that 67% of the population lived in rented tenements. The chief defects of these tenement-houses is the want of air, light and ventilation in the rooms, and their general uncleanly condition. The number of sleeping-rooms having no outside windows was 3657. The reasons given for the occupation of such quarters were chiefly intemperance, low rent, poverty, choice, necessity and nearness to work.

More than 120,000 of the population of Glasgow live in one-room tenements, and 264,000 in two-room tenements.² Such conditions do not exist in any American city, even though the density of the population in certain limited areas in New York city exceeds that of the most densely populated parts of London.

1) The commission defines a "tenement-house", as meaning "every house, building, or portion thereof, which is rented, leased, let, or hired out to be occupied, or is occupied as the house, home, or residence of three or more families, living independently of one another, and doing their cooking on the premises, or by more than two families upon a floor so living, and cooking, but having a common right in the halls, stairways, yards and water-closets, or some of them."

2) *Life in one room*, by Dr Russell, medical officer of health of Glasgow.

For the relief of these evils, different methods have been adopted: 1) cleaning of tenements, and attempting to reform the habits of the occupants; 2) erecting model tenements; 3) municipal purchase of bad districts, destruction of buildings and erection of new and better ones; 4) inducing the removal of families to the suburbs, or to become owners of their dwellings.

Following the example of Miss Octavia Hill of London, who began her work in 1864, several philanthropic ladies (Miss Collins of New York, Mrs Lincoln of Boston, and Miss Wright of Philadelphia) have carried out similar work in these cities, by improving conditions already existing. In addition to this work, voluntary organizations have been formed, for the purpose of erecting model dwellings after the plan inaugurated by Mr Geo. Peabody in London.

The Improved dwellings association of New York, the New York tenement-house building company, the Commission of public works and the Astral apartments association of Brooklyn, together with several other corporations and individuals, by organized effort, have accomplished much in the way of erecting model dwellings for the poor.

Municipal purchase of areas, with destruction of unsanitary buildings and the erection of better houses, has not yet been undertaken by city governments in America.

In New England, several manufacturing corporations have made commendable efforts to induce their employees to purchase their own homes. It has also been the custom, even from the first half of the present century, for many manufacturing corporations to provide and to rent tenements to their operatives.¹

The **Cooperative savings bank and building system** has also proved successful, specially in Philadelphia, and more recently throughout other parts of the Union, in furnishing the funds for building houses for artisans, mechanics and others.

¹) See description of the mill tenement-houses of Lawrence. *Report of sanitary commission of Mass.*, 1850. p. 442-446.

One of the most recent factors which is now indirectly effecting an improvement in this direction, is the introduction of **electric street railways** connecting cities with their suburbs, and thus constituting a rapid, easy and economical method of reaching more sparsely settled districts, a blessing for wage-earners, who were formerly compelled to live in the crowded sections of cities.

The following figures present some of the conditions of life in the cities, with reference to this subject. The table brings out in sharp contrast some of the conditions prevailing in New York city and Philadelphia, since in New York city over 82% of the families live in houses having more than 3 or 4 families, while in Philadelphia only 4.9% live under the same conditions, and 84.6% of the families have each a house of their own.

POPULATION, FAMILIES, DWELLINGS AND AREA, IN LARGEST CITIES OF THE UNITED STATES¹

Cities having over 250,000 in each

CITIES	Population 1890	Families	Dwellings	Area in sq. miles	Popu- lation per sq. mile	Average number persons to dwelling	Average number families to dwelling	Families in dwellings		
								Having 1 family	Having 3 families and over	Having 10 families and over
New York	1 515 301	312 766	81 828	40 22	37 675	18.52	3.82	12.02	82.08	38.60
Chicago	1 099 850	220 320	127 871	160 57	6 850	8.60	1.72	35.04	38.80	.86
Philadelphia	1 046 964	205 135	187 052	129 39	8 092	5.60	1.10	84.64	4.90	.07
Brooklyn ²	806 343	170 970	82 282	26 46	30 474	9.80	2.08	24.64	53.03	1.77
St Louis	451 770	91 756	60 937	61 35	7 364	7.41	1.51	44.46	23.47	1.20
Boston	448 477	89 716	52 669	35 28	12 712	8.52	1.70	34.63	37.46	1.75
Baltimore	434 439	86 654	71 112	28 38	15 308	6.02	1.20	69.53	7.52	.07
San Francisco	298 997	52 535	47 183	15 46	19 340	6.34	1.11	82.65	6.42	.35
Cincinnati	296 908	63 530	33 487	25 00	11 876	8.87	1.90	31.96	48.49	2.67
Cleveland	261 353	53 052	43 835	24 88	10 505	5.96	1.21	69.33	8.88	.55
Buffalo	255 664	51 461	37 290	39 04	6 549	6.86	1.38	54.05	20.11	.57

¹ From *Encyclopedia of social reform*. New York, 1897.² Now consolidated with New York city.

The duty of the local board of health, in regard to the tenement-house population, is a very important one, since the board of health has the legal authority to act in a summary manner when the occasion demands it. In most, if not all the cities of the United States, the sanitary authorities have well-organized departments for the purpose of tenement-house inspection, with authority to cause dwellings to be put in proper sanitary condition, and when this is not practicable, to order them to be vacated, and in some instances to be destroyed.¹ Following the Scotch practice, the system of ticketing apartments² and limiting the number of occupants and the cubic air-space to each one, has also been adopted in some American cities.

In the city of New York the tenement-house inspector is required to ascertain the following facts:³

- Street number
- Name and address of owner
- Number of families
- Number of occupants
- Overcrowding
- Halls, if lighted
- Privy accommodations — number of sittings
- Whether separately and independently connected with sewer
- Rags
- Schools
- Housekeeper on premises
- Cellars, if clean and dry
- Cellars, if fit for human habitation
- Yards, whether properly graded
- Yards, whether sewer connected
- Front and rear areas, whether graded
- Front and rear areas, whether sewer connected
- Waste-pipes, whether trapped
- Waste-pipes, whether joints are connected with cement or lead
- Waste-pipes, whether ventilated 2 feet above the roof
- Soil-pipes, whether trapped
- Soil-pipes, whether joints are connected with cement or lead
- Stairs and balusters throughout the house
- Walls and ceilings of halls and rooms throughout the house
- Floors of rooms and halls throughout the house

1) Acts of Massachusetts. April 1, 1897.

2) The Ticketed House of Glasgow. President's address before the Philosophical society of Glasgow. J. B. Russell, M.D., LL.D. November 1888.

3) From *annual report of board of health*, New York, 1876.

Slop-sinks, whether trapped and ventilated
Wash-basins, whether trapped and trap ventilated
Bath-tubs, whether trapped and trap ventilated
Water-supply pipes
Roof
Skylights and roof ventilation
Leaders
Eaves-gutters
Chimneys
Fire-escapes, whether encumbered
House-drain, whether defective or earthenware
Water-closets, whether trapped and trap-ventilated
Privy-vaults
School-sinks
Privy-houses
Cesspools
Urinals, whether properly flushed
Fences
Hydrants in yard
Air-shafts
Ash and garbage receptacles, whether suitable, sufficient and clean
Ash and garbage receptacles, whether kept within the stop-line

The inspections of this class of houses made by the board in 1896, were 190,134, resulting in 38,858 complaints on which orders were issued. In addition to the foregoing, 45,601 night inspections were made to prevent overcrowding. Three hundred twenty-two houses were ordered to be vacated. This course is taken where the owners refuse to comply with orders, and in the majority of cases notices are complied with before the order of vacation takes effect.

At the beginning of the present century, public health in the sense now accorded to the term, could hardly be said to exist, since public sanitation is one of the necessities dependent very largely on the close aggregation of the population, and at that period there were scarcely a half dozen cities in the new republic which contained in each a population of more than 10,000 people, and not one having 100,000.

By an act of the legislature of New York, of February 10, 1797, entitled, an act "to prevent the bringing in and spreading of infectious diseases in this state," a board of health was created for the city of New York, with power to make rules and orders.¹

1) *Report of Metropolitan board of health, 1866. History of health laws. p. 366.*

By acts of the legislature of Massachusetts, boards of health were created for the towns of Boston and Salem in 1799, and similar action was soon afterward taken for the protection of other towns. The board of health of New Orleans was created by an act of the legislature in 1818. The board of health of Philadelphia was incorporated in 1806, that of St Louis was established September 2, 1843. But for the period embracing the early half of the century, little information can be gained in regard to the operations of such boards, other than the duty of preventing the spread of small-pox.

INDUSTRIAL HYGIENE

A very large proportion of the population of the United States is engaged in useful occupations, the total number of such employed persons amounting to many millions. By the census of 1880, there were engaged in all occupations, including agriculture, manufacturing, mining and commerce, 17,392,099 persons, and in 1890 these had increased to 22,735,661. Some of these occupations or industries, and specially those which are conducted indoors, have a decided effect on the health of those who are employed. The special industries in which operatives are subjected to **harmful influences** are mining, cotton and woolen manufacture, paper-making (specially in the department of rag-sorting and cutting), stone-cutting, grinding and polishing of steel implements, match-making, wool and hair-sorting and hide-cleaning, the manufacture of poisonous colors and dyes, pottery and all manufactures into which lead enters as a component part (painting, plumbing, type-setting, glazing, etc.). To these may be added certain industries and occupations in which the employed are specially liable to serious accidents involving the loss of life, limb or sight. But little organized work has been accomplished thus far in America in this important direction, other than that which has been provided for by the enactment of certain laws requiring factory inspection by special officials appointed for the purpose.

The chief danger in these occupations is that which results from the inhalation of dust, either of an irritating character, as in the case of file-cutting and needle-grinding, or of a specific, poisonous nature, such as is illustrated by the dust of infected foreign hides and hair, and that of the floors of workshops infected with the expectoration of tuberculous workmen.

Efficient ventilation constitutes one of the best means of preventing the occurrence of the diseases to which workmen are subject. To this may be added the frequent cleansing of floors of workshops, the provision of cuspidors properly supplied with disinfectants, and regulations prohibiting expectoration upon floors, and elsewhere.

Legislation is very much needed providing for a careful investigation of the conditions to which operatives are subjected in harmful employments, the causes of the evils, and the best means of applying the proper remedy.

Arsenical products. The manufacture of different arsenical products has produced more or less injury among workmen, specially in those establishments where paris green is made in large quantities, for use in agricultural districts in the destruction of the various insect pests.

The use of arsenic in the manufacture of wall-paper and textile fabrics has been greatly diminished, in consequence of the popular demand for goods which are free from this dangerous poison. In several states, legislative inquiries relating to this subject have taken place, and bills for the restriction of this use of arsenic have been introduced, but thus far manufacturing interests have succeeded in preventing their enactment.

BURIAL OF THE DEAD

In the early history of the British colonies, in North America, burials were made in **small grave-yards** or cemeteries, usually in the villages or quite near them, and in most of the larger and older cities these places still remain. But in these large cities, burials in such places have been discontinued, either in consequence of overcrowding, or of local

ordinances forbidding their further use. In a few instances, burials were made **beneath churches** in the older cities, but this objectionable practice has almost entirely ceased, and at the present time, larger cemeteries have been established at considerable distances from the densely settled portions of large cities. These are carefully laid out and enclosed, and in many instances, the sculptor's art has contributed much to their adornment. The annual custom of visiting and **decorating** the **graves** of dead soldiers of the wars, in all parts of the United States, has undoubtedly contributed toward making cemeteries more attractive and beautiful.

So far as concerns the question of public health, very decided progress has been made in the United States. Laws relating to the **transportation of the dead** have been enacted, requiring special care in the case of transportation of those who have died of infectious disease. Laws have also been enacted providing for the **licensing of undertakers** and embalmers, and ordinances to prevent the holding of public funerals in case of deaths from certain infectious diseases, and forbidding intramural burials.

The average annual intramural interments per acre, in 1890¹, were as follows for the principal cities. They varied very greatly from a maximum of 43.4 per acre in Jersey city to 0.97 in Dayton, Ohio.

	Per acre	Per hectare
New York city	4.3	10.6
Chicago	7.8	19.3
Philadelphia	15.6	38.5
Brooklyn	12.3	30.4
St Louis	8.8	21.7
Boston	16.3	40.3
Baltimore	13.3	32.9
San Francisco	17.9	44.2
Cleveland	22.9	56.6
Buffalo	4.1	10.1

1) From *U. S. census of 1890, social statistics of cities.*

Embalming. Within the past 10 years, through the zeal of undertakers and others having charge of funeral rights, the practice of embalming the dead has spread in the United States with greater rapidity than is demanded by the people. In not a few instances has it seriously interfered with the action of justice, in determining the cause of death in cases of violence, and in some states laws have been enacted providing for the restriction of the practice.

In the United States, as elsewhere, the false pride and sentiment which too often attends the burial of the dead, leads to the impoverishment of families, and large sums are expended in the burial of those who in their lifetime lacked the necessities of life.

Cremation. Within the past 20 years the custom of cremating the bodies of the dead has obtained a considerable foothold in the United States, and several crematories have been built in different parts of the country.

The first crematory was built by Dr Julius T. Le Moyne at Washington, Pa., in 1876, and was used for the disposal of his own remains. From that time to the present much has been written in America in relation to this safe and rational method of disposal. No more establishments for incineration were erected till 1884, but from 1884 to the present time 26 crematories have been established. In some instances, laws have been enacted favoring the practice and placing it under proper restrictions.

That the public sentiment in favor of incineration is steadily increasing, is shown by the rapidly augmenting number of bodies submitted to this method of disposal.

The following list furnished by Mr Louis Lange of New York city shows the rapid progress which has been made in the establishment of crematories in the United States, and in the number of persons whose remains have been incinerated in these since their introduction in 1876.

In the 8 years 1876-1883, only 25 bodies had been disposed of in this manner, and all of these were treated in the

crematory built by Dr Le Moyne at Washington, Pa. From that time the annual number increased to 1699 in 1898, with a total of 8885 in all, up to the close of 1898, and by the date of opening of the Paris exposition of 1900, the number will probably have reached about 10,000.

**DIAGRAM SHOWING THE
NUMBER OF CREMATIONS PER ANNUM
IN THE UNITED STATES**

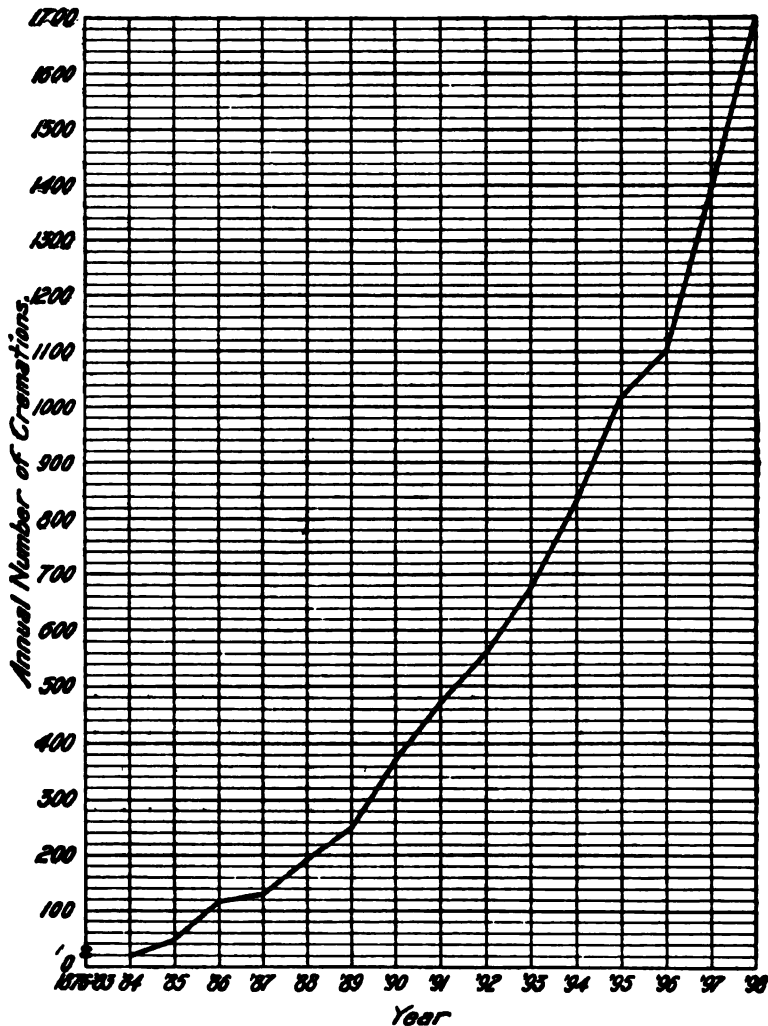


TABLE OF CREMATIONS IN THE UNITED STATES, 1876 TO 1898

CREMATORIES	Date of establish- ment	1876	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	Totals	
		1885	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898		
New York city (U. S. Cremation Co.)	State of N. Y.	-	-	9	77	67	83	106	160	187	186	232	243	296	330	331	466	2773	
Buffalo		-	-	1	8	17	16	23	30	38	27	30	31	41	28	44	40	374	
Troy		-	-	-	-	-	-	-	-	4	10	14	15	12	10	18	14	113	
Swinburne Island		-	-	-	-	-	-	-	-	2	-	60	28	8	1	1	3	3	106
Waterville		-	-	-	-	-	-	-	-	-	-	-	1	1	6	5	4	21	
St. Louis, Mo.	1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Philadelphia, Pa.	1888	-	-	-	-	-	21	20	42	60	64	72	87	96	86	118	109	778	
San Francisco, Cal. (Odd Fellows')	1895	-	-	-	-	-	14	28	31	51	62	68	74	88	85	78	114	693	
Boston, Mass.	1893	-	-	-	-	-	-	-	-	-	-	-	-	66	101	214	260	641	
Cincinnati, Ohio	1887	-	-	-	-	-	-	-	-	-	-	1	87	88	135	160	167	638	
San Francisco, Cal. (Cypress Lawn)	1893	-	-	-	-	11	21	34	45	43	34	42	38	66	46	71	59	510	
Chicago, Ill.	1893	-	-	-	-	-	-	-	-	-	-	42	111	88	70	54	65	430	
Los Angeles, Cal.	1887	-	-	-	-	-	-	-	-	-	-	6	42	66	54	82	130	380	
Detroit, Mich.	1887	-	-	-	-	7	5	12	17	29	41	37	38	37	37	34	58	352	
Pittsburgh, Pa.	1886	-	-	-	-	3	10	14	24	21	33	47	22	31	29	44	51	329	
Baltimore, Md.	1889	-	-	-	-	14	9	8	9	13	14	13	10	13	14	16	23	167	
Lancaster, Pa.	1884	-	-	-	-	-	-	3	5	12	16	22	15	11	17	21	14	136	
Davenport, Iowa	1891	-	3	36	14	13	6	1	3	1	3	5	2	1	1	1	2	92	
Milwaukee, Wis.	1895	-	-	-	-	-	-	-	-	6	7	13	8	8	9	23	17	91	
Washington, D. C.	1896	-	-	-	-	-	-	-	-	-	-	-	-	-	21	34	30	85	
Pasadena, Cal.	1895	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	38	63	
Washington, Pa.	1876	25	13	1	1	-	-	-	-	-	-	-	2	-	4	14	13	24	55
St. Paul, Minn.	1897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	
Fort Wayne, Ind.	1895	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	11	13	6
Middletown, Conn. (Asylum)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-
Mt. Auburn, Mass. (Cambridge)	1899	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals		25	16	47	114	127	190	249	372	471	561	674	831	1017	1101	1391	1699	8885	

Legal provision has been made in some states, providing special means for carrying out the laws in regard to death certificates, in regard to bodies presented for incineration, and providing that in case of death by violence, the body shall not be embalmed before it is seen by an official medical officer (medical examiner or coroner).

RAILWAY HYGIENE

The rapid development of the different railway systems in the United States in the last half century¹ has made it imperative that measures should be taken to protect the patrons of these roads from the dangers incident to public travel. One of the chief difficulties which hinders the progress of this important branch of public hygiene, consists in the fact that the long, through lines of travel extending across the continent, pass across very many different states, each one of which is, in a measure, a law unto itself, and it is no easy matter to secure uniformity of legislation on this subject among the different states. At the present time, almost the only legislation on this subject is that which exists in a few states in relation to the transportation of dead bodies, and specially regarding the bodies of those who have died of infectious diseases. Yet, it is a matter of certainty that a living, breathing human being, sick with an infectious disease, is a far greater danger to persons in his immediate proximity, than the body of one who has died of the same disease, and is enclosed in a coffin. This coffin is also carried in a baggage or freight car, apart from the passengers, and is almost invariably enclosed in an outer box when prepared for transportation. It therefore follows, that legislation intended for the protection of the traveler from the sick and living is of far

1) The mileage of the railways of the United States, in 1898, was 185,371, or 6.28 linear miles of railway for each 100 square miles of territory, and 25.6 miles for each 10,000 of the population.

The number of passengers carried 1 mile, in 1898, was 13,379,930,004, and the total number of passengers carried was 501,066,681. (*Report of interstate commerce commission, 1898.*)

Further information in regard to the railway suburban travel may be found in appendix 4.

more importance than that which is designed to protect him from the dead.

An investigation made in Massachusetts with reference to certain infectious diseases, in 1891, showed that small-pox, diphtheria, scarlet fever and measles were relatively more prevalent in the towns situated on railway lines than they were in those towns not so connected. Out of 2298 deaths from small-pox which occurred in 20 years in the state, only 13 occurred in towns not directly on some line of railway communication. The same fact was noted, though in a less marked degree, in regard to diphtheria, scarlet fever and measles. Undoubtedly, many unrecognized cases of infectious disease travel on railways, hence, measures are necessary to provide, **first**, for the thorough cleansing and disinfection of cars and their furnishings, specially of sleeping-cars, at the ends of their respective routes or lines of travel; **second**, for a careful supervision of the water-closets on the trains, and that they are not allowed to be used at, or near the stations in cities and towns. It is quite practicable, also, and desirable, to require that some disinfectant of recognized potency be added to the water used for flushing purposes, when such is provided; **third**, the water-supply, the food-supply, and the ice-supply used on long lines for dining and lunch-cars and at stations, should receive careful supervision. It is also desirable that the milk used on dining-cars and at stations should be procured of stated parties, and they should be held responsible for its quality and for the cleanliness of the dairies from which it is obtained; **fourth**, measures are necessary for the exclusion of persons sick with infectious diseases, from public conveyances (cars and steamers), and if this is impracticable, to provide for their isolation in separate cars or compartments.

Decided improvement is already taking place along these lines. Railway corporations find it for their own advantage to provide such protection as is necessary, and are gradually furnishing sanitary appliances, either in advance of, or in con-

sequence of compulsory legislation. Railway hygiene has been a frequent topic of discussion, in recent years, at the meetings of the American public health association, and also of the railway surgeons and medical directors of the different railway systems. The latter formed an organization at Chicago, November 9, 1894, under the name of the "American academy of railway surgeons", and have published an annual volume of transactions since that date.

VITAL STATISTICS

One of the chief objects of mortality returns and reports is the collection and preparation of materials ultimately to be handed over to those who are presumed to be competent, by virtue of their professional education, to deal with questions of public hygiene and sanitation. The statistics accumulated each year by the registrar and his clerks, are destined, in the natural course of events, to serve as a basis for the sanitary operations of the board of health; for the accomplishment of this purpose it is indispensable that they should first be submitted to the investigations of the hygienist. Unless so utilized, these statistics can be but a dead letter, and must remain practically valueless. They contain little more than the bald statement of disease and death. From this statement to recognize the causes of excessive and undue mortality, and the degree of its preventability, and to deduce suitable prophylactic measures, is a task which physicians only can be considered competent to undertake.¹

The United States, as a whole, can not be said to have a system of vital statistics, regularly conducted, such as exists in many older countries. The sole attempts which have been made to collect the vital statistics of the country at large, have been those which constituted a part of the work of the United States census in its enumeration of the years 1860, 1870, 1880 and 1890. Much credit is due to Dr John S. Billings, U. S. A., for the intelligent supervision which he gave to that branch of the work. The volumes of mortality statistics which were compiled under his direction are extremely valuable, as showing the principal data referring to mortality for the census years in which the facts were collected.

¹) *Second annual report of the board of health of Boston, 1874.* Paper by Dr F. W. Draper. p. 73.

No inquiry made at the end of the year, for which the data are desired, so far as vital statistics are concerned, can be considered as complete or reliable, and Dr Billings estimates that the returns obtained by the census enumerators did not exceed 60 or 70% of the actual number of deaths. He further says:

Our census affords the only opportunity of obtaining even an approximate estimate of the birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of state and municipal registration.

It remains a fact, therefore, that only a minor fraction of the states have thus far adopted and carried out a system of regular collection and publication of their vital statistics. The states which have maintained a fairly complete system for several years are the following:

- Maine beginning with 1892
- New Hampshire beginning with 1880
- Vermont beginning with 1857
- Massachusetts beginning with 1842
- Rhode Island beginning with 1853
- Connecticut beginning with 1848
- New York beginning with 1893¹
- New Jersey beginning with 1878
- Delaware beginning with 1881
- Michigan beginning with 1897

In addition to the foregoing there has also been a partially complete collection of marriages, births and deaths for several years, in Michigan, Minnesota, Indiana, Kentucky and Alabama. In Michigan, under the recent energetic supervision of Dr Wilbur, the registration has been very much improved, and now includes the returns from nearly every district in the state.

The existence of registration laws, enforced quite thoroughly in recent years in the 6 New England states, renders it possible to present the accompanying table of the principal vital statistics of these states for the 5 years 1893-97. For the sake of economy in space, the aggregates of the 5 years and the mean rates of the period only are presented.

1) From *Public health laws*, New York. ch. 661.

VITAL STATISTICS



PRINCIPAL VITAL STATISTICS OF THE SIX NEW ENGLAND STATES

(For the five years 1893-97)

Mean annual population of the period (estimated)	Maine		New Hampshire		Vermont		Massachusetts		Rhode Island		Connecticut		Total (New England)	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
	667,248		302,286		332,493		2,801,406		302,569		817,218		8,103,187	
Marriages and rate per 1,000 population	28 085	8.40	19 794	10.09	13 881	8.35	113 224	9.05	16 776	8.55	32 089	7.85	223 789	8.77
Living births and rate per 1,000 population	71 733	21.50	41 353	21.09	34 876	20.98	348 021	27.83	50 656	25.82	98 097	24.00	644 736	25.27
Deaths and rate per 1,000 population	54 472	16.33	35 308	18.00	27 888	16.77	240 215	19.21	36 749	18.72	72 086	17.64	466 718	18.29
Deaths under one year and rate per 1,000 births	8 463	117.90	6 052	146.30	4 723	135.40	54 969	158.50	8 447	166.50	14 700	149.80	97 354	151.00
Deaths from Consumption, and rate per 10,000 population	6 056	18.15	3 520	17.95	2 552	15.35	27 443	21.94	3 849	19.61	6 607	16.17	50 027	19.70
Deaths from Pneumonia, and rate per 10,000 population	4 695	14.07	3 164	16.13	2 651	15.95	23 751	18.99	3 430	17.48	6 517	15.95	44 208	17.32
Deaths from Typhoid Fever, and rate per 10,000 population	1 111	3.33	586	2.99	477	2.87	3 508	2.80	593	3.02	1 142	2.79	7 417	2.91
Deaths from Small-pox, and rate per 10,000 population	0	0	0	0	1	0.006	46	0.04	2	1.01	22	0.05	71	0.03
Deaths from Measles, and rate per 10,000 population	138	0.41	88	0.45	104	0.63	786	0.62	254	1.29	436	1.07	1 806	0.71
Deaths from Scarlet Fever, and rate per 10,000 population	205	0.61	228	1.16	200	1.20	2 533	2.03	505	2.57	497	1.22	4 168	1.63
Deaths from Diphtheria and Croup, and rate per 10,000 population	938	2.81	630	3.21	627	3.77	8 082	6.46	1 226	6.25	2 138	5.23	13 611	5.35
Deaths from Cholera Infantum, and rate per 10,000 population	2 546	7.63	1 946	9.92	933	5.61	12 945	10.35	2 569	13.09	3 302	8.28	24 241	9.50
Deaths from Cancer, and rate per 10,000 population	2 368	7.10	1 319	6.73	991	5.96	8 387	6.71	1 133	5.77	2 264	5.54	16 462	6.45

The chief points shown by these figures are the higher birth and death-rates in the 3 more densely settled states of Massachusetts, Rhode Island and Connecticut; slightly lower death-rates from typhoid fever in these states than in the 3 northerly states (a mean death-rate for this disease of 2.83 per 10,000 living, in Massachusetts, Rhode Island and Connecticut, as compared with 3.12 in the 3 other states), and much higher death-rates from diphtheria and cholera infantum in the 3 densely settled states than in the 3 other states.

The mean density of population of the 3 states of Maine, New Hampshire and Vermont at the time of the census of 1890, was 28.5 per square mile, while that of the 3 southern states of the group was 238.4, or more than 8 times as great.¹

By a careful estimate, derived from the census year 1880, and by comparison with the more accurate returns of the large cities, Dr Billings came to the conclusion that the death-rate of the United States, in 1880, was very close to 18 per 1000 living inhabitants. He also concluded that the birth-rate was 36 per 1000, or twice the death-rate. The death-rate of the New England states, taken together, has averaged about 19 per 1000 for the past 25 years. That of the older middle states about 17 or 18, while that of the more newly settled western states has probably been as low as 13 or 14 per 1000, since in these states there is a predominance of inhabitants at the healthy ages of life.²

On several of the wing-frames in the hygiene section of the exposition, will be found some diagrams which present the death-rates of the registration states in different years, together with the death-rates from different diseases, mostly of the infectious class. In some instances the latter are represented as a percentage of the mortality from all causes. This

1) The figures in this table may be compared with those presented for the previous year (1892) in "*a summary of the vital statistics of the New England states*," published by the secretaries of those states. This summary contains further information as to the distribution by sexes, ages and nativity, and the statistics of the principal cities and larger towns. P. S. King & Son, London, Eng., and Damrell & Upham, Boston, Mass.

2) The death-rate of persons aged from 10 to 30 years, is from 6 to 7 per 1000 annually, consequently, a newly settled district having a preponderance of persons at those ages, will have a lower death-rate than an older district in which the relative number of aged persons is greater.

method was adopted in states and cities having imperfect registration, in consequence of the impossibility of presenting an accurate showing by the former method.

On the whole, the registration of vital statistics is progressing in the United States, but not as rapidly as might be wished. Considerable impetus has been given to the discussion of the subject, by the frequent presentation of papers at the meetings of the American public health association and the American statistical association. The importance of the subject as a foundation for our accurate knowledge in matters pertaining to public health, can not be overestimated. Those states, in fact, which have made the most commendable progress in preventive medicine are also the states which have brought their systems of registration to the highest degree of perfection.

By far the best general presentation of the vital statistics of the United States is that which may be found in the volumes of the United States census of 1880 and 1890, including the special volumes devoted to the vital statistics of certain large cities. The reports of 5 of the New England states, with those of Michigan and Minnesota, are published in separate volumes, while those of New York, New Jersey, Connecticut, and several other states, are incorporated in the annual reports of the state boards of health. Within the past year much improvement has also taken place in the registration of Indiana, in consequence of the exertions of its state board of health.

Classification. The question of the classification of diseases has assumed increased importance, in recent years, in consequence of the rapid progress of medicine. The system in general use for nearly half a century in the registration states and chief cities of the United states, has been that of Dr Farr, and has served a useful purpose. This system, however, is now shown to be far behind the present demands of medical progress, and improved methods are urgently called for.

The principal substitute for the older systems now offered and also now accepted and adopted by a considerable number

of authorities throughout the world, national, state and municipal, is that of Dr Bertillon of Paris.

This system was brought to public notice in the United States, in a paper by Dr Bertillon, presented at a meeting of the International statistical institute, at the Columbian exposition at Chicago, in August 1893, and was later on the subject of discussion at the meeting of the American public health association, at the same place, in October 1893.

Subsequently, the committee on vital statistics of the same association, after a full discussion of the subject, reported in its favor, and their recommendation was endorsed by the association in October 1898.¹ This committee, through the commendable activity of its secretary, Dr Wilbur, has accomplished much toward the introduction of the system in several of the registration states and in some of the larger cities. A very full and complete presentation of the system, with minor details and adaptations to an American population, is printed in the monthly bulletin of vital statistics of Michigan, beginning with February 1898.

RURAL HYGIENE

In the United States, the population occupying the rural districts is still largely in the majority, and probably amounts to nearly 50 millions.

(By the census of 1890 the rural population was estimated at 71% of the whole, or about 44 millions.)

There must necessarily be a large ratio of the population engaged in the pursuits of agriculture, since the broad prairies and other agricultural lands of this large territory furnish food, not only for the domestic population, but also send ample supplies every year to feed the inhabitants of other countries.

The preservation of the health of this portion of the population is a matter of quite as much importance as that which relates to the dwellers in cities; and while it is true that the average length of life of the farmer is greater than

1) See *Transactions American public health association*, 1898. p. 311.

that of people engaged in other occupations, it might undoubtedly be lengthened by closer attention to sanitary principles. There are few occupations in which hygiene is more neglected. The farmer pleads that he can not afford to take measures for ventilating, warming or draining his house. On the contrary, he can not afford not to take these precautions.

Much improvement has actually taken place in those states and districts where an awakening of the people to the need of better modes of living has been brought about by various means, either through the occurrence of such epidemics as neglect and carelessness often produce, or through active missionary work of a sanitary nature. In the following directions there is room for much improvement in the sanitary conditions of the rural population.

The conditions referred to are: 1) A good location of the home, having a sunny exposure, with dry soil and freedom from dampness. 2) A well-planned house, adapted to the wants of its inmates. 3) Thorough drainage and disposal of the household wastes, so that neither harm, nor annoyance to others can take place. 4) A pure water-supply; this is a point of special importance in the case of dairy farms, since the farmer is then a distributor of food to populations living at a distance, and it often happens that a polluted water-supply at the dairy causes an epidemic of disease among the consumers of the milk when this water is used for washing cans and cooling the milk.

Another defect in the hygiene of the rural population of the United States is that of badly selected or badly cooked food. Notwithstanding the great abundance and variety of food, both animal and vegetable, which is produced on the well-tilled farms of New England and on the western prairies and fertile fields of the south, it is undoubtedly true that the food of the farmer is less varied and less wholesome than that of the urban population.

In the more densely settled states it often happens that the

better and the more nutritious products of the farm (eggs, and the products of the dairy) are sent to the markets of the neighboring cities, while the farmer's family is fed on a limited and less nutritious diet. The chief defects of the diet of the rural population may be stated as follows:

Too exclusive use of fried food.

Salt meat, to the exclusion of fresh meat.

Exclusive use of fine wheat flour in the place of the coarser and more wholesome sorts of meal and flour which were largely in use a half century since.

Pork in some form is used as food by a very large part of the population of temperate climates, and when it is the product of healthy animals it is a nutritious and wholesome food for all who are accustomed to a life of toil, and for those who have naturally vigorous constitutions.

Swine, however, are subject to many diseases, some of which, specially those of a parasitic nature, are communicable to man.

It has been observed that those animals which were fed on the offal and garbage of cities were infected in a much greater degree than those which were fed on wholesome food.

It is only a few months since the writer was called to investigate 2 outbreaks of trichinosis, in which more than 50 persons were taken ill and 5 died. The disease is almost unknown among persons of American birth, since the latter invariably use pork thoroughly cooked, while the eating of raw pork is quite a common practice among those of foreign birth, specially among Germans.

Tape-worm, also, usually has its origin in eating the flesh of swine which has been insufficiently cooked.

The government provides an ample force of inspectors at the principal pork-packing places, for the purpose of securing protection to the consumers of this pork in other countries to which it is exported. But the agriculturist himself, who produces the pork upon his farm, has no protection for his family who may be consumers of the same, except that which

common sense at once suggests—the thorough cooking of the meat. This applies with greater force to those farms which are near great cities, to which the offal of these cities is often hauled for the purpose of being fed to swine. Investigators have shown that this class of animals is much more liable to trichinosis than those which are fed on the healthful food raised upon a farm—meal, grain, potatoes and other vegetable foods.

The proper ventilation of sleeping-rooms is another matter of importance, and one which is usually neglected.

THE CLIMATE OF THE UNITED STATES IN ITS RELATION TO HEALTH

In a country which extends almost from the tropic of cancer in the south to Point Barrow in northern Alaska, several hundred miles beyond the Arctic circle, and from Eastport, Maine, in longitude 67° west, to the extremity of the Aleutian islands, at a point beyond 160° west, the range in all the factors which make up the somewhat indefinite term “climate” must necessarily be great.

That climate has a decided influence on the health of a given population is a well established fact.

Yellow fever is a disease, for example, which rarely prevails north of latitude 35° , in the United States, and even when it once appears north of 35° it is easily prevented from spreading, but in the gulf states the greatest vigilance on the part of the sanitary authorities is necessary, both to prevent its introduction and to suppress it when once introduced.

Pneumonia, in the United States, appears to destroy more lives in the high and mountainous districts than it does along the low lands of the sea-coast, while the opposite may be said of **phthisis**, which attacks the dwellers in low and damp districts more severely than those who inhabit the drier tablelands of the interior. **Diphtheria** is more prevalent in the colder, northern portions of the United States than in the south, and **malarial fever** is more prevalent in the south and

southwest. These facts are vividly shown in Dr Billing's maps in the United States census volumes of 1880 and 1890 on vital statistics.

The different factors which constitute climate — temperature, humidity, wind, rainfall, cloudiness and atmospheric pressure, have a varying effect upon health, the two first being probably the most important.

The disease with reference to which the greatest share of attention has been paid, so far as its relation to climate is concerned, is **consumption**, and many different parts of the country have been selected as places in which to establish resorts or sanatoria where this disease may be successfully treated, largely on account of the favorable influence of the environment which the local climate affords. New England, and particularly its sea-coast region, is ill adapted for persons of consumptive tendency, but health resorts for such persons have been established in the Adirondack regions of northern New York, in the higher Appalachian districts of North and South Carolina, in the high lands of the Rocky mountain slopes of Colorado and New Mexico, and in southern California.

The death-rate from **consumption** in New Mexico is less than that of any other part of the United States. The semi-tropical and insular position of Florida, also give to it a reputation as a favorable resort throughout the winter for those who desire to escape from the more rigorous climate of the northern states at that season.

The sea-coast from Cape Cod southward affords excellent facilities for sea-bathing throughout the summer months, and on the Florida and gulf coasts throughout the year. North of Cape Cod the temperature of the water in summer is from 10° to 15° (5° to 8°C) colder than it is on the south side of the Cape. That of Vineyard Sound and places to the southward have a mean temperature in July and August usually above 75° (24°C).

Great interest in the study of climatology in its relation to health has been awakened in recent years by the organization

of the American climatological association, which holds annual meetings for the discussion of the subject, and has published an annual report each year since its organization in 1884.

MINERAL SPRINGS

The number of mineral springs which have been from time to time discovered within the limits of the United States amounts to from 8000 to 10,000. The waters of 300 of them have been offered for sale to the extent of more than 21,000,000 gallons, valued at about \$5,000,000 (25,906,735 fr).

The waters of these springs differ very greatly in their chemical constitution, from water which contains as small an amount of solid residue as 25 or 30 parts per million, and is therapeutically but little different from distilled or rain water, to those highly charged springs, often having a high temperature, in which chlorides, sulphates, carbonates and other salts abound. The former usually owe their therapeutic action more to the quantity than to the quality of the water taken, while the latter undoubtedly exercise definite action in consequence of the mineral constituents which they contain.

A more careful study and investigation of these springs than has yet been made would undoubtedly bring to light many important facts in regard to their value which are yet unknown and unrecognized. A systematic and rational classification is much needed, as well as a uniform method of chemical analysis and interpretation. Specially is it desirable, in order to compare results with those of the best foreign authorities, to abandon the old expression of "grains per gallon," substituting therefor some of the ordinary decimal expressions of notation. The best summary of the springs of the United States, in recent years, is that which was published by Dr A. C. Peale in the annual report of the director of the United States geological survey, 1892-1893, containing the maps representing the location of the different mineral springs whose waters are used commercially, and the health resorts located near them.

THE RELATION OF THE GENERAL GOVERNMENT TO THE PUBLIC HEALTH

Several departments of the general government have greater or less connection with sanitary questions, either directly or indirectly, and specially those departments which have medical officers as an essential part of their working forces.

The **surgeon general's office** of the war department maintains a constant oversight of the health of the military forces, including the sanitation of military camps, barracks, forts, hospitals and everything that pertains to military hygiene; the food of the soldier in time of war, and specially the selection of the daily ration in tropical climates, his clothing and equipments, require the most careful attention.

The **library** of the surgeon general's office contains the largest collection of medical works in the world, as shown in its published catalog.

The **navy department**, through its bureau of medicine and surgery, exercises a similar care over the sailors and marines of the navy, and much of the well known efficiency of this branch of the service, in the recent war, was due in a great measure to the fact that the personnel of the service, the sailors and marines, were selected healthy men, well-fed, well-clothed and well-cared for.

The department maintains a system of naval hospitals distributed at the several naval stations in different parts of the country. It has also established a museum of hygiene at Washington, in which is exhibited a great variety not only of the sanitary appliances used on naval vessels, but also a general exhibit of subjects pertaining to public health.

The **marine hospital service** is a branch of the treasury department, originally constituted for the purpose of giving relief to "sick and disabled seamen." For this purpose a large number of well equipped hospitals are maintained, at or near the principal sea-ports and lake-ports throughout the country. The service is under the charge of a supervising surgeon general, with a large force of medical officers.

The functions of this branch of the public service (organ-

ized near the close of the last century) have been enlarged from time to time, the most important of its new duties being the inspection of quarantine.

Under the Act of 1893 (February 15) giving additional powers to this branch of public service, its surgeon general was required to examine all local seaboard quarantine regulations, and to cooperate with such local authorities in the enforcement of the local and national regulations, as well as those relating to intercourse between states and territories. Provision was also made for rules and regulations for such places as had insufficient protection under local authorities.

The same act provided for obtaining and publishing weekly reports of the sanitary condition of foreign ports from which infectious diseases might be transmitted to the United States.

By an Act of 1890 (March 27) the same authority was required to prepare rules and regulations (under the direction of the secretary of the treasury) for preventing the spread of cholera, yellow fever, small-pox or plague from one state or territory to another. The secretary of the treasury is also authorized to employ inspectors to execute such regulations.

Another branch of public service which is in close touch with the subject of hygiene in certain directions is the **department of agriculture**, which maintains in its bureau of animal industry a continuous investigation of animal diseases, and specially of those which are communicable from animals to man, and hence are of vital consequence from a sanitary point of view.

The chemical work of this department has also rendered useful service to public health, in consequence of the published results of its investigations with reference to the food products of the country, and its inquiries on the subject of food adulteration.

Each of the foregoing branches of public service issues annual reports, together with many other special documents, as occasion requires.

The **census office**, a branch of the department of the interior, collects and publishes information once in 10 years relating to the vital statistics of the population, reference to which is made in another part of this monograph (page 65).

STATE MEDICINE

The term "**state medicine**" admits of a broader interpretation than preventive medicine or public health, since it includes the latter, together with such correlated subjects as medical education, the registration of medical practitioners, inquest laws, medical expert testimony, and other topics involving the relation of the physician to the state in his professional capacity.

MEDICAL EDUCATION

A comparison of the condition of the **medical education** to-day in the United States with that which prevailed in the middle of the century shows a very great advance, and the opportunities furnished to every young man or woman now entering upon a course of study are such as were little thought of in earlier periods. Within a few years the period of attendance upon lectures at many medical colleges has increased from 2 to 3 courses and in some to 4. There is also a tendency to require that chemistry, botany, comparative anatomy, and other allied branches should be considered as preliminary work, and that the medical student should receive instruction in them at some college or scientific school previous to beginning his course of medical study. In the department of instruction in preventive medicine, or hygiene, there is opportunity for much improvement, and the day is not far distant when our medical men will receive special training for this line of work, as is now afforded in England where the degree of D.P.H. (diploma in public health) is now granted. There is a rapidly increasing demand for men to fill the places of public health officials, chemists and bacteriologists for this special line of work. The importance of the position of medical men in this connection is recognized by the fact that no sanitary board or organization in any state or large city is

ever established without including one or more physicians in its membership, and in very many instances the entire board consists of medical men.

It is therefore important, not only that **educational facilities** should be afforded for this branch of official work, but that they should be of the highest character. It is also important that such men should receive special training in the recognition of the principal infectious diseases, by means of clinical instruction. It is on account of the lack of this education that errors in the diagnosis of small-pox are of very frequent occurrence among those who are called on to fill the position of health officers of cities. A recent writer¹ states that in 2 different towns of about 10,000 inhabitants, every physician except 1 failed to recognize small-pox. In another town of 4000 inhabitants all but 1 physician failed to recognize the disease. In another town with an outbreak of 30 to 40 cases the disease was called a "continued eruptive fever", no one recognizing it, and this mistake has occasionally accounted for the rapid spread of the disease.

The development of the **laboratory** as a useful adjunct, not only of medical education, but also of state and municipal sanitary work, has contributed vastly to the successful operation of boards of health and the prevention of the spread of disease and the consequent lowering of the death-rate.

There can be no doubt that the recent general inauguration of a system of state **examinations** of applicants for license to practise medicine has had a good effect in raising the standard of medical education throughout the country, in suppressing quackery and diminishing the number of ignorant pretenders and consequently of producing better material from which competent health officers may be selected.

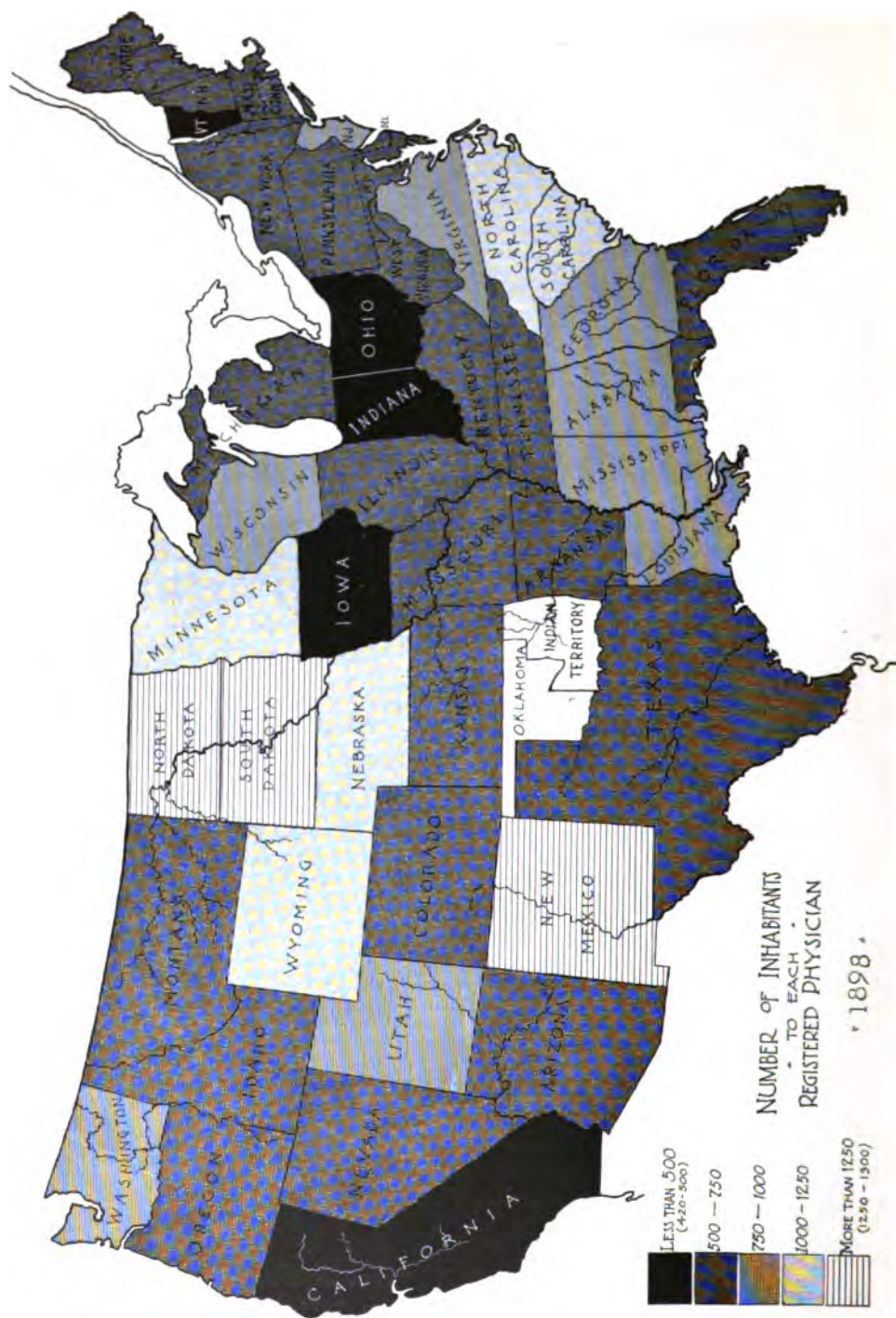
The old time practitioner, the country doctor, an all-round physician who was accustomed to rely on his own resources, and to accept all emergencies which came to his door, even to

¹) Article on medical education by Dr Geo. G. Groff, American academy of medicine. *Bulletin*. February 1898. p. 248.

the extraction of teeth, the occasional performance of a capital operation, or relieving the distress of a sick or injured domestic animal, is becoming less and less numerous, while every branch of specialism is full to overflowing. One great reason for this changed condition is the tendency to urban aggregation in all parts of the country. It was quite a common saying at an earlier period that 1000 people were sufficient to support a physician, as an average throughout the community, and that was about the usual proportion. Possibly, the former part of this statement is true to-day as an average, since a very considerable portion of the whole number of medical men is in the position of waiting for support.

The actual number of registered physicians in the United States, according to the most recent count, shows an average for the whole of about 1 to 647 inhabitants, but the proportion in the different states varies greatly. California appears to be the state which is most liberally supplied, the proportion there being 1 physician to 420 inhabitants, while in Iowa nearly the same conditions prevail. On the other hand, in North and South Dakota and New Mexico, the proportion was respectively 1 to 1285, 1296 and 1391 inhabitants.

The following table presents the figures for each state. For some of the states the figures will probably require revision at the next census but may be regarded as approximately correct. The relative conditions in each state are also graphically shown on chart No. 5.



NUMBER OF INHABITANTS TO EACH REGISTERED PHYSICIAN

Name of state	Number of inhabitants to each physician, 1898	Name of state	Number of inhabitants to each physician, 1898
California . . .	420	Virginia . . .	810
Iowa . . .	422	Georgia . . .	811
Indiana . . .	466	New Jersey . . .	827
Vermont . . .	480	Alabama . . .	843
Ohio . . .	492	Washington . . .	887
		Wisconsin . . .	888
		Louisiana . . .	908
Illinois . . .	517	Mississippi . . .	914
Arizona . . .	524	Utah . . .	978
Missouri . . .	527		
Colorado . . .	535	Minnesota . . .	1043
Tennessee . . .	538	Wyoming . . .	1065
Massachusetts . . .	539	Nebraska . . .	1085
New Hampshire . . .	553	South Carolina . . .	1148
Maryland . . .	559	North Carolina . . .	1173
New York . . .	565		
Texas . . .	570	North Dakota . . .	1285
Arkansas . . .	580	South Dakota . . .	1296
Maine . . .	594	New Mexico . . .	1391
Kentucky . . .	607		
Nevada . . .	614		
Michigan . . .	625		
Connecticut . . .	659		
Rhode Island . . .	659		
Oregon . . .	669		
West Virginia . . .	670		
Pennsylvania . . .	670		
Oklahoma ¹ . . .	692		
Florida . . .	696		
Delaware . . .	705		
Montana . . .	717		
Idaho . . .	727		
Kansas . . .	737		

REGISTRATION OF MEDICAL PRACTITIONERS

The first general movement in the direction of establishing general or state boards of health began about the middle of the century, and resulted in the establishment of the Louisiana, Massachusetts and California boards before the close of 1870.² No recent or successful movement, however, was organized in the direction of limiting and restricting medical practitioners, till a law was enacted in Illinois, in 1877, for the regulation of medical practice and conferring authority for its

1) In the chart facing this page, the space assigned to Oklahoma is blank, in consequence of uncertainty as to the population at the time of preparing the chart, but information received later affords an opportunity to state the population for 1898 with reasonable accuracy, and hence, to present the figures given above (see appendix 1, p. 87).

2) See notes on these boards in appendix 3.

enforcement on the state board of health.¹ Up to that time the most ignorant and untrained charlatans could practise in any part of the United States without fear of the law, but by the persistent and untiring energy of Dr John H. Rauch, secretary of the Illinois board of health, the law was carried into effect, and as a result "out of 3600 non-graduates who were practising medicine in the state when the act went into effect, about 1400 left the state, or ceased to practise."² These irregular practitioners settled in other states for the transaction of their business, wherever a credulous public was willing to tolerate their presence.

This action on the part of Illinois resulted almost immediately in the attempt of many other states to take similar measures for their own protection, and in several instances, mostly in the new states, similar laws were enacted with but little opposition, while in some of the older states it was only after several years of persistent and long-continued effort, chiefly on the part of the medical profession, that legislation was finally secured. The chief points in these laws consist:

- 1) In the registration of all practising physicians.
- 2) In the examination of candidates for license to practise.

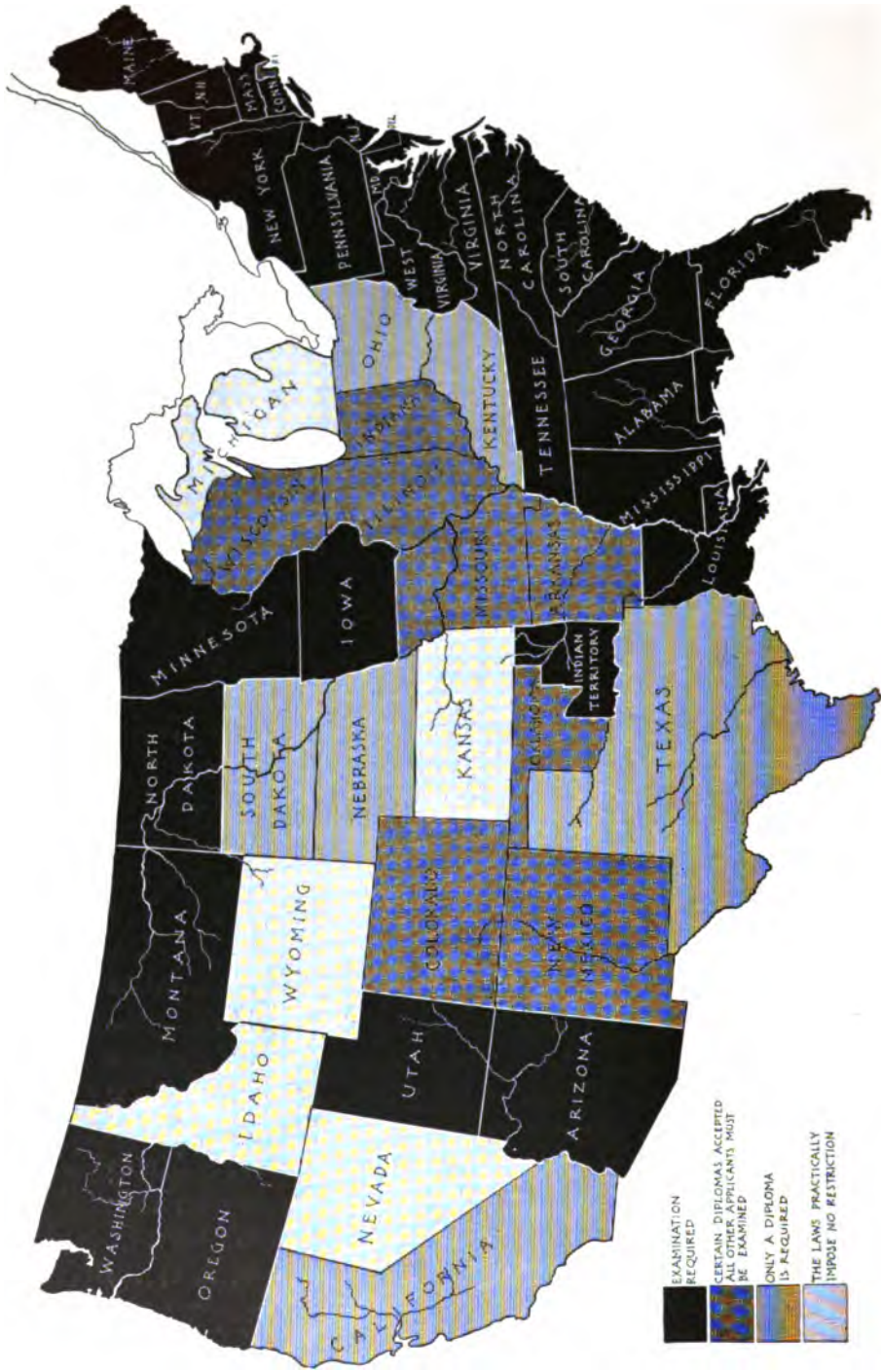
The first of these, registration, is a feature of all the laws, while examination of candidates is not required in all the states. In some of them the presentation of a diploma from some reputable medical college is the essential feature, and the examination of candidates is not required. Dr McIntire classifies the states in 4 groups, according to their several requirements, and his classification has been followed in preparing the following list, and also chart No. 6, in which the facts shown in the list are graphically presented.³

The following summary presents the results of examinations

1) Laws had existed in some states for nearly a century restricting medical practice, but they had either become inoperative, or had been repealed. For a full discussion of this subject, see annual address by Dr R. H. Fitz in *Transactions of Massachusetts medical society*. v. 16, 1894. p. 275.

2) Buck's *hygiene*. v 1. p. 58.

3) American academy of medicine. *Bulletin*. February 1897. p. 700. For details of this classification, see appendix 1.



REGISTRATION of PHYSICIANS

made in 1898 in those states from which accurate returns could be obtained.¹

Total number examined 2890; number accepted 2328; rejected 562.

REGISTRATION OF PHYSICIANS

CLASS A	CLASS B
Alabama	Arkansas
Arizona	Colorado
Connecticut	Illinois
Delaware	Indiana
District of Columbia	Missouri
Florida	New Mexico
Georgia	Oklahoma
Indian Territory	Rhode Island
Iowa	Wisconsin
Louisiana	
Maine	CLASS C
Maryland	California
Massachusetts	Kentucky
Minnesota	Nebraska
Mississippi	Ohio
Montana	South Dakota
New Hampshire	Texas
New Jersey	
New York	CLASS D
North Carolina	Idaho
North Dakota	Kansas
Oregon	Michigan
Pennsylvania	Nevada
South Carolina	Wyoming
Tennessee	
Utah	
Vermont	
Virginia	
Washington	
West Virginia	

1) American academy of medicine. *Bulletin*. February 1899. p. 691.

There is very little uniformity in the details of the laws, but they can all be classed under 4 general divisions, as follows :¹

- A) Examination required.
- B) Certain diplomas are accepted ; all other applicants must be examined.
- C) Only a diploma is required.
- D) The laws practically impose no restriction.

INQUEST SYSTEMS OF THE UNITED STATES

The method of procedure employed in most of the United States for the **investigation of the cause of death** in cases occurring from violent, sudden, or suspicious causes is the coroner system, a method which had its origin in England at least 7 or 8 centuries ago, but is unknown either in Scotland or on the continent of Europe. For the efficient operation of this system several officials are usually employed, a coroner, a coroner's physician, a jury of 6 men or more, and an officer who is employed to summon the jury. The coroner usually makes a view or a superficial examination of the body, and if in his opinion the cause of death was of a violent or criminal character, he causes a jury to be summoned, and if a more thorough investigation is required, in order to reveal the cause of death, he directs a medical man to make an autopsy.

Following the example of some of the principal continental countries some of the states have introduced a new and more direct method for the investigation of this class of deaths, namely, the medical examiner system, the principal features of which are the following: the abolition of the jury and the substitution in place of the coroner (an official supposed to combine the incongruous functions of law and medicine) of a medical examiner to determine the cause of death, and the reference of all legal questions to a district judge. In those states where this plan has been adopted its operation has been

¹) American academy of medicine. *Bulletin*. February 1897; February 1898; February 1899. Articles entitled "State requirements for the practice of medicine," by Charles McIntire, A.M., M.D., Easton, Pa.

perfectly satisfactory, and there is no desire to return to the musty traditions of the past.

The abolition of the jury was shown to be both rational and economical, since every case in which criminal violence is shown must necessarily be revised in the courts before another jury, whenever the actual culprit can be found, and this waste of the public funds, in paying 6 or more men who are usually absolutely unqualified to consider expert medical questions, constitutes a public farce. Cases of the grossest neglect, incompetence and fraud had become of such common occurrence under the old method that a change was deemed imperative. In a city of about 300,000 inhabitants there were 47 coroners in commission, where 2 medical men with 1 associate now conduct the same work in a population 60% greater, and in a far more satisfactory manner.¹

The medical system here referred to has been adopted either as a whole, or in part, in the states of Massachusetts, Rhode Island and Connecticut.

1) *Philadelphia medical journal*, January 15, 1898. Article by the writer.

Appendix I

STATISTICAL TABLE

1	2	3	4	5	6	7	8	9	10	11
Name of state or territory	Population, 1890	Estimated population, 1898	Has a state board of health	Per capita expenditure by state boards of health, 1898		Per cent of population in towns supplied with public water, 1890	Per cent of population supplied with public water, 1890-97	Per cent of population in sewered towns, 1890-97	Number of inhabitants to each physician, 1898	Registration of physicians classified, 1899
				Fractions of a dollar	Fractions of a franc					
Alabama ²	1 513 017	1 713 437	Yes ¹	.0080	.010	0.4	11.5	7.5	843	A
Arizona	59 680	74 964	No	.0000	.000	0.0	26.6	5.3	524	A
Arkansas	1 138 179	1 388 708	Yes	.0036	.019	0.0	7.7	2.2	580	B
California	1 808 130	1 488 879	Yes	.0027	.014	20.1	57.7	39.1	420	B
Colorado	418 198	586 494	Yes	.0042	.022	0.0	57.0	43.2	535	C
Connecticut ³	746 258	845 104	Yes	.0092	.048	22.7	73.5	52.7	659	A
Delaware	168 493	186 001	Yes	.0070	.037	18.9	46.4	38.3	705	A
Dist. of Columbia ⁷	230 392	272 606	-	-	-	-	-	-	-	A
Florida	391 422	488 965	Yes	.0866	.450	0.0	22.3	13.4	696	A
Georgia	1 837 353	2 073 491	No	.0000	.000	3.3	15.6	10.2	811	A
Idaho	84 385	125 805	No	.0000	.000	0.0	22.2	6.1	727	D
Illinois ²	3 826 351	4 425 135	Yes	.0021	.011	6.4	50.3	38.0	517	B
Indiana	1 192 404	1 363 686	Yes	.0021	.011	0.7	30.5	17.9	466	B
Indian Territory	-	-	-	-	-	-	-	-	-	A ⁶
Iowa	1 911 896	2 141 721	Yes	.0023	.012	0.0	24.1	11.8	422	A
Kansas	1 427 096	1 771 896	Yes	.0015	.008	0.0	24.3	11.4	737	A
Kentucky ²	1 858 635	2 026 591	Yes	.0012	.006	6.2	21.5	12.5	607	D
Louisiana ²	1 118 587	1 261 500	Yes	.0040	.021	23.8	26.3	1.0	908	A
Maine	661 086	670 806	Yes	.0112	.059	1.2	52.1	26.3	594	A
Maryland	1 042 390	1 128 348	Yes	.0049	.026	31.3	50.1	42.0	559	A
Massachusetts	1 238 943	1 603 629	Yes	.0224	.116	24.3	90.1	63.3	539	A
Michigan	1 093 889	1 459 451	Yes	.0035	.018	6.1	41.8	30.1	625	A
Minnesota	1 301 286	1 718 068	Yes	.0105	.055	0.0	41.0	28.0	1043	D
Mississippi ²	1 269 600	1 416 002	Yes	.0141	.074	0.0	6.3	1.0	914	B ⁵
Missouri	1 679 124	3 087 827	Yes	.0016	.008	13.6	32.6	24.9	527	A
Montana	122 159	206 559	No	.0000	.000	0.0	40.2	23.1	717	A
Nebraska ²	1 058 910	1 544 116	Yes	.0001	.0005	0.0	35.9	22.6	1085	C
Nevada	45 761	32 557	Yes	.0015	.008	0.0	22.6	27.6	614	D
New Hampshire	376 530	400 161	Yes	.0106	.055	6.7	66.1	39.1	553	A
New Jersey	1 444 933	1 695 987	Yes	.0089	.046	26.8	82.0	63.7	827	A
New Mexico ²	153 593	180 815	Yes	.0000	.000	0.0	17.4	3.6	1391	B
New York	5 997 853	6 729 839	Yes	.0052	.027	34.7	72.3	58.8	565	A
North Carolina	1 617 947	1 792 505	Yes	.0011	.006	0.0	7.6	1.6	1173	A
North Dakota	122 719	299 367	Yes	.0040	.021	0.0	12.5	4.5	1285	A
Ohio	3 672 316	4 051 719	Yes	.0040	.021	9.6	42.9	32.6	492	C
Oklahoma ²	56 496	312 400 ⁶	Yes	.0032	.017	0.0	26.6	7.4	692	B
Oregon	313 767	424 966	No	.0000	.000	0.0	40.2	26.0	669	B
Pennsylvania	5 258 014	6 038 112	Yes	.0010	.005	27.0	66.0	40.9	670	A
Rhode Island ²	345 506	400 686	Yes	.0142	.074	29.0	89.7	56.0	659	A
South Carolina	1 151 149	1 275 607	Yes	.0012	.006	0.0	10.6	5.5	1148	A
South Dakota ²	328 808	513 240	Yes	.00097	.005	0.0	16.4	3.1	1296	C
Tennessee	1 767 512	1 947 645	Yes	.0029	.015	1.7	15.2	8.1	538	A
Texas ²	1 235 523	2 750 542	Yes ²	.0016	.008	0.0	19.8	8.4	570	C
Utah	207 905	259 059	Yes	.0028	.015	0.0	39.8	30.1	978	A
Vermont	332 422	332 530	Yes	.0301	.160	1.4	39.3	17.1	480	A
Virginia	1 655 980	1 770 712	Yes	.0011	.006	4.4	12.9	10.9	810	A
Washington	349 390	568 809	Yes	.00066	.003	0.0	50.6	32.1	887	A
West Virginia ²	762 794	878 264	Yes	.0017	.009	4.7	13.5	6.2	670	A
Wisconsin	1 686 880	1 983 986	Yes	.0028	.015	0.0	36.7	25.8	888	B
Wyoming	60 705	92 638	No	.0000	.000	0.0	35.5	19.3	1065	D

1) The state board of health of Alabama is the state medical association.

2) In these states the state board of health is also the board of registration of medical practitioners.

3) Texas has a health officer who performs the duties of a state board of health.

4) Cherokee and Choctaw nations only.

5) A decision of supreme court has made the regulations inoperative.

6) These are the figures of the territorial census of 1898.

7) The District of Columbia is practically a municipality under control of the national government.

NOTES ON THE FOREGOING TABLE

The table, appendix I, presents in detail the figures quoted under the topics relating to state boards of health, public water-supplies, sewerage, and registration of medical practitioners. Six charts also illustrate the same subjects.

Column 3 Estimated population 1898. The figures in this column were obtained by the usual method adopted by most sanitary authorities, the annual increase between the 2 previous census enumerations. No inflexible rule can be applied to the populations of the different states with accurate results, in consequence of the extremely variable conditions of migration which influence the different parts of the country. It was therefore deemed best to adopt one method for all (except Oklahoma, where a state census was made in 1898), nearly a decade having elapsed since the last census, at the time of preparing this monograph. The results will probably be fairly correct for the older states and those having large populations, but considerable allowance may possibly be necessary for the newer and rapidly increasing states and territories, such as Nebraska, Idaho, Washington, Montana, Oklahoma¹ and the 2 Dakotas.

The population of only one state, Nevada, had diminished between the 2 census enumerations of 1880 and 1890, while that of Vermont was practically stationary.

Alaska, the Indian territory, and the more recently acquired possessions are not treated in this table.

The population of Alaska in 1890 was 32,052. The census of the Indian territory and reservations in other districts not included in the general enumeration of 1890 was 325,464.

The District of Columbia is not embraced in the principal columns, since it should be treated as a municipality. The population of the district outside the city of Washington constitutes but a small fraction of the district.

The figures in columns 5 and 6 were computed on the basis of the estimated population of 1898, since the financial statements of the different boards of health were chiefly of that year.

The figures in column 7 were computed from the census enumerations of 1860.

1) The census of 1890 gave this territory a population of 56,496, but a territorial census taken in 1898 found a population of 311,400, which seems reasonable, since the report of the territorial governor of the previous year (1897) states that there were 90,585 children of school age in the territory in that year.

Those of columns 8 and 9 were computed from the census of 1890, since the actual ratio of the estimated population of the towns supplied with water and sewers in 1896-97 to the estimated total population in the same years, would not differ very greatly from the ratio of the same towns in 1890 to the total population of 1890.

The figures in column 10 were computed on the estimates given in column 3 and may, therefore, be subject to slight changes at the next census.

The authority for the information presented in this table is as follows :

Column 2 Populations. The United States census.

Column 4 Transactions of the American public health association and correspondence. v. 24. Columbus, Ohio, 1898.

Columns 5 and 6 Annual reports of state boards of health, the state laws of each state for 1897 and 1898, and from correspondence with the secretaries of state boards of health. The state laws present appropriations only, but the appropriations and the expenditures do not usually differ much, and the appropriation shows quite as well as the expenditures, the support given by the people to the general sanitary authority. In a few instances, in the case of unexpected epidemics, the appropriation has been largely exceeded, and in some states this emergency is provided for by a contingent fund.

Columns 7, 8 and 9 Manual of American water works, editions of 1883 to 1897.

Column 10 Polk's *register of physicians*. Detroit, 1898.

Column 11 Articles by Dr McIntire in *Bulletin* of American academy of medicine, February 1897, February 1898 and February 1899.

Notes on columns 5 and 6 (expenditures): In most instances the figures were computed from the annual appropriations, in the following instances from the expenditures :

Connecticut: \$5310 for general expenses in 1898, and \$2404.35 for water investigation.

Florida: The state board of health has a revenue from quarantine fees. The receipts from this revenue in 1898 were \$35,940.85.

Maryland: Out of the total appropriation, \$2500 is for food and drug inspection, \$1800 for vital statistics, and \$2500 for infectious disease investigation.

Louisiana: The board receives no regular appropriation. The

appropriation for 1898, on which the per capita expenditure was estimated, was a special appropriation "for first aid" to the parishes. The board derives a revenue from quarantine fees and inspection of illuminating oil.

Massachusetts: The expenditures for 1898 were as follows: general expenses, \$17,231.98; food and drug inspection, \$11,062.68; protection of purity of inland waters, \$29,999.66.

Michigan: General expenses, \$6000; \$2500 to enable the board to supply teachers with information to teach in the schools the best methods of restricting and preventing dangerous communicable diseases.

Pennsylvania: The board expended \$383,852.62 in 1889 at the time of the great flood at Johnstown, including inspection and disinfection. In this flood, which was caused by the bursting of a dam near the head waters of the Conemaugh river, 2300 lives were lost. The board also expended \$7800 in 1899 for the suppression of small-pox.

Rhode Island: General expenditures, \$3395.48; vital statistics, \$1000; infectious diseases, \$2292.52.

Texas: The expenditure is made for frontier and sea-coast purposes, mainly for quarantine.

Vermont: General expenses, \$2000, and \$8000 for maintenance of state laboratory.

The figures presented in columns 5 and 6 have reference only to the amounts expended by, or appropriated for the use of state boards of health. These sums are only a small fraction of the amounts actually expended in the states for sanitary purposes. The exact sum expended by state boards of health in 1898 can not be stated, since in several instances appropriations only were returned, but making allowance for a slight difference between expenses and appropriations, the total sum expended by such boards in 1898 can not have been far from \$360,000. The total amount expended in the country for all sanitary purposes, comprises a considerable number of items, and was very much greater than the sum named as expended by state boards of health alone. The municipal boards in each state, as a general rule, expend much more than the state boards, since the funds of those boards are chiefly devoted to executive work.

For example, the state board of health of Rhode Island expended in 1898 \$6,688, while the health commissioner of Providence, the

chief city of the state, reports an expenditure of \$110,484 for sanitary purposes, including street cleaning and garbage collection. In some other states the ratio between these 2 items differs still more greatly.

To the expenditures of state and municipal boards there should be added large sums paid for the work of inspection and slaughter of infected domestic animals, as well as that which is appropriated for the work of experiment stations and special food and dairy commissioners not connected with state boards of health.

The general government also expends annually a considerable sum in its 3 branches of the military, naval and marine hospital service, in maintaining the health of the army, navy and the merchant marine, and for quarantine inspection. In the department of agriculture, the bureau of animal industry and other branches of service are maintained very largely for direct sanitary work affecting the health of the people at large.

In the case of most of the older eastern states, the figures presented represent an expenditure made for general sanitary purposes, whether of an advisory or of an executive character. But in the case of several of the southern states, and specially of those bordering on the gulf of Mexico, large powers have been given to the state boards almost exclusively for quarantine purposes, in preventing the introduction of certain infectious diseases, chiefly yellow fever, from the neighboring West India Islands and from Central and South America.

In a few states the state board of health derives a revenue from the examination of applicants for medical registration.

Note on column 9, Louisiana: New Orleans had no completed system of sewers at the date of compiling this table, but a committee has recently been appointed to consider the subject and report on it.

Puerto Rico: A general or superior board of health was established for the island of Puerto Rico in 1899, whose duty it is to have "general supervision of the interests of the public health of the island, and to specially study its vital statistics."

The board is further required to "make sanitary investigations and inquiries respecting the causes of disease" and "to disseminate information upon these and similar subjects among the people."

It is also required to make "sanitary inspections of public institutions" and to consider and report on "plans for all new water-supplies, sewerage plants," etc.

Its different duties and functions cover 23 different topics, all having reference to the public health.

A letter from the secretary of the superior board of health, dated October 23, 1899, states that "at this moment the existence of a case of small-pox is unknown on this island. Nine months ago a serious epidemic was threatened, and the disease prevailed over the whole island. Since then 800,000 vaccinations have been performed. It is possible to stamp out small-pox in Spanish-American countries. There have been no yellow fever cases all summer. No serious diseases have followed the hurricane."

The board also issued several circulars relating to the prevention of the spread of infectious diseases. The population of the island is about one million. Eight or ten towns have public water-supplies. Three larger towns have sewerage systems.

Appendix II

MUNICIPAL STATISTICS

	Population, census of 1890	General death-rate	Deaths from certain causes Percentage of total mortality						Cost of main- tenance of health dept.	Square yards of streets swept per week	Garbage burned or otherwise disposed of
			Consumption	Typhoid fever	Diphtheria and Croup	Scarlet fever	Cholera Infantum	Cancer			
Albany	94 983	18.76	12.7	5.0	3.7	.3	3.8	5.1	\$9 146	1 108 114	-
Allegheny	105 887	14.16	9.3	4.0	1.8	.6	5.2	3.0	20 926	600 000	11 852
Baltimore	434 439	18.82	10.5	1.9	4.0	.4	3.8	3.2	81 252	17 516 771	144 820
Boston	448 477	18.54	12.4	1.8	1.8	.3	4.4	1.1	149 890	8 660 440	909 680
Buffalo	255 664	12.25	9.3	2.2	1.6	.3	5.6	4.7	43 659	-	-
Chicago	1 099 850	13.92	10.7	2.8	3.0	.3	2.5	3.5	174 404	8 848 500	1 010 682
Cincinnati	296 908	12.86	12.3	2.0	1.4	1	1.4	3.7	41 245	3 028 530	36 910
Cleveland	261 353	12.37	9.6	2.6	3.6	.6	3.5	3.7	41 851	-	-
Columbus	88 150	9.92	15.8	2.4	1.1	.1	2.4	5.6	10 866	-	-
Denver	106 713	11.54	26.0	2.1	1.8	.5	2.0	3.2	40 298	3 872 000	12 000
Detroit	205 876	13.29	8.9	1.1	3.3	.9	5.6	3.6	43 048	-	-
Indianapolis	105 436	10.83	13.0	2.2	2.0	.5	3.5	5.1	8 864	-	-
Jersey City	163 003	12.36	12.2	2.0	3.5	1.7	2.8	2.5	9 015	-	-
Kansas City	132 716	10.73	4.9	1.9	1.6	.3	1.6	4.1	34 999	11 200 000	25 000
Louisville	161 129	13.59	10.4	3.9	1.2	.2	1.5	3.9	7 493	1 770 423	-
Milwaukee	204 468	10.34	10.9	1.6	1.5	.1	11.8	5.7	30 892	4 882 532	-
Minneapolis	164 738	8.62	13.2	4.4	1.5	.1	1.8	5.4	38 109	3 203 000	-
Newark	121 830	17.78	14.6	1.0	3.2	.4	7.2	3.1	50 117	1 987 392	-
New Orleans	222 039	24.39	12.9	2.7	.2	.01	2.3	2.6	38 804	1 333 200	191 250
New York ¹	1 515 301	18.68	12.0	1.0	2.2	1.1	3.3	3.1	535 569 ²	-	4 527 204
Omaha	140 452	6.29	11.8	3.6	1.8	.1	5.0	5.0	7 606	480 000	-
Philadelphia	1 046 964	17.56	11.9	2.9	5.4	.5	5.0	3.1	247 164	-	252 448
Pittsburg	228 617	16.66	6.8	4.4	1.8	.5	1.6	2.3	75 879	10 666 665	35 555
Providence	132 146	17.60	11.4	1.4	1.4	.1	5.0	4.2	19 068	-	-
Rochester	133 896	12.52	12.2	1.0	1.9	.4	2.6	5.0	8 742	1 139 893	-
St Louis	451 770	14.13	11.4	1.1	2.3	.3	4.7	3.4	98 515	-	520 000
St Paul	133 156	8.51	11.3	2.3	4.5	.8	1.8	3.0	9 578	3 385 300	-
San Francisco	298 997	12.12	15.9	.9	2.4	.1	.7	5.7	114 073	-	-
Syracuse	88 143	12.12	16.0	3.0	2.6	.8	6.6	2.3	23 424	1 933 881	21 972
Toledo	81 434	9.10	9.9	2.2	1.9	.4	4.1	3.3	12 722	760 000	-
Washington	230 392	20.58	12.0	2.9	3.2	.3	2.3	3.0	44 054	-	-
Worcester	84 655	16.61	12.3	.7	1.9	.3	7.3	3.3	17 119	334 099	-
									\$2 088 390 ³	86 710 761 ⁴	7 699 373 ⁵

1) Not stated.

2) By contract.

3) Disposed of by householders.

4) 28,000 tons (34,580 tonneaux).

5) Partly by contract.

6) For the year 1896, quoted from report of that year, p. 59. (This does not include Brooklyn and other boroughs added in 1897 and making in all a population of about three and one-half millions.)

7) 10,828,674 francs.

8) 72,500,636 square meters.

9) 5,886,370 cubic meters.

NOTES ON THE FOREGOING TABLE

This table is compiled from the bulletin of the United States department of labor (September 1899, No. 24), entitled "statistics of cities," and presents certain sanitary statistics of the 32 largest cities of the United States for the year 1898.

The items presented are the following :

Population, 1890. Death-rate, 1898 (upon an estimated population compiled by the department). Percentage which each of the following diseases bore to the total mortality: Consumption. Typhoid fever. Diphtheria and croup. Scarlet fever. Cholera infantum. Cancer. Cost of maintenance of health departments. Square yards of streets swept per week. Cubic yards of garbage burned or otherwise disposed of.

The figures in the column of expenses of health departments do not represent all expenses for sanitary purposes, since in some cities such departments as street cleaning and garbage disposal are administered by other boards. For example, in Providence, R. I., the total amount expended for sanitary purposes is reported by the health commissioners, in 1898, as \$110,484.44 (572,354 fr.) of which more than three-fourths is expended by departments other than the board of health.

In Pittsburgh, \$143,619.63 (744,143 fr.) was expended in 1898 for street cleaning, and \$77,717.84 (402,683 fr.) for garbage collection and disposal by other boards.

In Buffalo, \$63,993.50 (331,572 fr.) was appropriated for the year 1899, which sum includes \$15,000 for a free bath-house, and \$5,000 for "quarantine hospital." In addition to the expenses of the health department, \$310,840 (1,610,570 fr.) are appropriated for street cleaning, garbage and ash collection and disposal.

In Minneapolis, \$41,699 (216,057 fr.) was expended in 1898 for street cleaning, by a separate department.

In New Orleans, the annual cost of street cleaning is about \$58,000; garbage and ash collection, \$97,000, and quarantine, \$60,000; total, \$215,000 (1,114,000 fr.).

In Cleveland, the amount appropriated in 1899 for sanitary purposes, garbage and ash collection, and other minor matters, was \$176,000 (916,062 fr.).

In Chicago, the amount appropriated in 1899 for street cleaning was \$385,424 (2,000,000 fr.) and for disposal of garbage and ashes, \$450,000 (2,331,600 fr.).

Appendix III

NOTES ON THE HEALTH LAWS OF CERTAIN STATES

The following laws are quoted chiefly for the purpose of showing the methods under which some of the first state boards of health were established, since these laws show radical differences in their organization.

The state board of health of Louisiana, while nominally a state board of health, is practically a municipal board acting for the city of New Orleans. It was appointed chiefly to take charge of quarantine for the protection of the city, and consequently of the river population living above the city. This was its main object as stated in the Act of 1855, in which the qualifications of its members were stated as follows: "The said members shall be selected with reference to their known zeal in favor of a quarantine system." Of the 28 sections in the organic Act of 1855, nearly all related to the one important subject of quarantine.

As a municipal organization this board was created March 17, 1818, under an act having the following title, "An Act to establish a board of health and health officer, and to prevent the introduction of malignant, pestilential and infectious diseases into the city of New Orleans."

By an act of March 15, 1855, entitled "An Act to establish a quarantine for the protection of the state" the board of health and their successors were "created a body corporate, under the name of the board of health of the state of Louisiana, to sue and be sued under that title" (section 27, Act of 1855), and the sum of \$50,000 was appropriated for its use.

The board was again reorganized March 1870, and again April 20, 1877, under the latter statute, it was authorized to act in conjunction with the city council, in the capacity of a board of health for the city of New Orleans.

The following act is the organic law creating the state board of health of Massachusetts. It served as a model in the creation of many other boards, and is therefore quoted in full, together with that of California, the state which immediately followed Massachusetts in creating a state board of health.

AN ACT TO ESTABLISH A STATE BOARD OF HEALTH

§ 1 The governor, with the advice and consent of the council, shall appoint seven persons who shall constitute the board of health and vital statistics. The persons so appointed shall hold their offices for seven years: provided, that the terms of office of the seven first appointed shall be so arranged that the term of one shall expire each year, and the vacancies so created, as well as all vacancies occurring otherwise, shall be filled by the governor with the advice and consent of the council; but any one may be reappointed.

§ 2 The board shall take cognizance of the interests of health and life among the citizens of this Commonwealth. They shall make sanitary investigations and inquiries in respect to the people, the causes of disease, and especially of epidemics, and the sources of mortality and the effects of localities, employments, conditions and circumstances on the public health; and they shall gather such information in respect to those matters as they may deem proper, for diffusion among the people. They shall advise the government in regard to the location of any public institutions. They shall in the month of January, make report to the legislature of their doings, investigations and discoveries during the year ending December 31st, with such suggestions as to the legislative action as they may deem necessary.

§ 3 The board shall meet at the State House once in three months, or as much oftener as they may deem expedient. No member, except the secretary, shall receive any compensation, but the actual personal expenses of any member while engaged in the duties of the board shall be allowed and paid.

§ 4 It shall be the duty of the board, and they are hereby instructed, to examine into, and report what, in their best judgment is the effect of the use of intoxicating liquor as a beverage, upon the industry, prosperity, happiness, health and lives of the citizens of the state. Also, what additional legislation, if any, is necessary in the premises.

§ 5 The board shall elect a secretary, either from their own number, or otherwise; but when elected he shall be a member of the board, and their executive officer. He shall perform and superintend the work prescribed in this law, and such other duties as the board may require. He shall receive from the treasury, in quarterly payments, an annual salary of twenty-five hundred dollars and his necessary travelling expenses incurred in the performance of official duties, after they have been audited by the board and approved by the governor and council, and all other necessary expenses arising in his office shall be paid out of the treasury in the same manner as those of the different departments of the government.

Enacted June 21, 1869.

The act establishing a state board of health in California is as follows:

§ 1 The Governor shall appoint seven physicians, two from the city of Sacramento, and the other five from different sections of the state, who shall constitute the state board of health and vital statistics. The physicians so appointed shall hold their offices for four years and until their successors are appointed, and all vacancies in the board shall be filled by the Governor.

§ 2 The state board of health shall place themselves in communication with the local boards of health, the hospitals, asylums and public institutions throughout the state, and shall take cognizance of the interests of health and life among the citizens generally. They shall make sanitary investigations and inquiries respecting the causes of disease, especially of epidemics, the source of mortality and the effects of localities, employments, conditions and circumstances on the public health; and they shall gather such information in respect to these matters as they may deem proper for diffusion among the people. They shall devise some scheme whereby medical and vital statistics of sanitary value may be obtained, and act as an advisory board to the state in all hygienic and medical matters, especially such as relate to the location, construction, sewerage and administrations of prisons, hospitals, asylums and other public institutions. They shall, at each biennial session of the legislature, make a report of their doings, investigations and discoveries, with such suggestions as to legislative action as they may deem proper.

§ 3 It shall be the duty of the board, and they are hereby instructed, to examine into and report what, in their best judgment, is the effect of the use of intoxicating liquor, as a beverage, upon the industry, prosperity, happiness, health and lives of the citizens of the state; also, what legislation, if any, is necessary in the premises.

§ 4 The board shall meet at the capital of the state, at least once in every three months, and as much oftener as they may deem proper. Their first meeting shall be held at the

capital, at the expiration of one week after their appointment shall have been made, and three members shall always constitute a quorum for business. They shall elect from their own number a president and permanent secretary; the latter shall reside at the capital, and shall be their executive officer. No member, except the secretary, shall receive any compensation; but the actual traveling expenses of the members, while engaged in the duties of the board, shall be allowed and paid out of the general fund.

§ 5 The secretary shall perform and superintend the work prescribed in this act, and shall perform such other duties as the board may require. He shall also furnish to the legislature, when in session, such information cognate to this act as from time to time they may deem necessary. An annual salary of twenty-five hundred dollars, and his office and other necessary expenses incurred in the performance of his duties, shall be paid to him in the same manner as that of other state officers.

§ 6 The expenses of the board, including the salary of the secretary, shall not exceed four thousand dollars a year.

Enacted April 15, 1870

Some recent health acts of the state of Mississippi furnish an illustration of the sanitary necessities which are forced on the Gulf states in consequence of their close proximity to tropical countries, and on account of the prevalence in these states of a semi-tropical climate throughout the summer season.

At a short extra session of the Mississippi legislature, in May 1897, an act was passed creating a department of public health with enlarged powers, providing for its organization with powers and duties quite similar to those of other boards, but making the hospital medical college at Vicksburg the bureau of vital statistics, with power to appoint county boards and physicians, to collect such statistics, to obtain vaccine lymph, and make reports to the department (laws of Mississippi, 1897, ch. 15).

By a later act of 1898, ch. 79, the state board of health is empowered to examine applicants for medical practice. It is also authorized to take charge of districts infected with yellow fever and other dangerous diseases, *and to apply proper restrictions, even to the extent of being provided by the governor with military force, to ensure a thorough quarantine.* (February 10, 1898.)

The appropriations for the board were \$20,000 for each of the years 1892 and 1893; \$25,000 for each of the years 1894 and 1895, and \$50,000 for 1898, and \$20,000 for 1899. In 1897 the expenses exceeded the appropriation by \$28,591.55, which sum was promptly provided by the next legislature.

An act of the state of Indiana passed in 1899 and taking effect April 28, contains some features worthy of mention, which are as follows:

By the terms of this act the state board of health is given certain authority over local boards of health, since the latter are required by section 8 of this act "to take prompt action to

arrest the spread of contagious and infectious diseases, to abate and remove nuisances dangerous to the public health, as directed or approved by the state board of health, and perform such other duties as may be required of them by the state board of health pertaining to the health of the people. They shall elect a secretary, who shall be the health officer of the appointing board, and who shall be a graduate of a reputable medical college recognized by the state board of medical registration, who, if not already informed in hygiene and sanitary science, shall immediately so inform himself, according to the requirements of the state board of health." His salary is determined by the number of the population. The state board of health is given power "to remove at any time, any county, city or town health officer for intemperance, failure to collect vital statistics, obey rules and by-laws, keep records, make reports or answer letters of inquiry of the state board, concerning the health of the people." Provision is also made for giving the state board of health entire supervision of the vital statistics of the state.

In Illinois, the pioneer state in relation to the registration of medical practitioners, a state board of health was created by a statute of May 25, 1877. By the terms of this act a board of 7 persons was appointed to hold office for 7 years, the term of office of one member to expire each year.

Four days afterward, May 29, 1877, additional powers were conferred upon this board as follows:

"Every person practising medicine, in any of its departments, shall possess the qualifications required by this act. If a graduate in medicine, he shall present his diploma to the state board of health . . . for verification as to its genuineness. If it is found genuine, and if the person named therein be the person claiming and presenting the same, the state board of health . . . shall issue the certificate to that effect, signed by all the members thereof, and such diploma and certificate shall be conclusive as to the right of the lawful holder of the same to practise medicine in this state. If not a graduate, the person practising medicine in this state shall present himself before said board, and submit himself to such examination as the said board shall require; and if the examination be satisfactory to the examiners, the said board shall issue its certificate in accordance with the facts, and the lawful holder of such certificate shall be entitled to all the rights and privileges herein mentioned."

By other sections of this act provision was also made for fees and penalties, for the recording of certificates by county clerks, for the refusal or revocation of certificates, and for the licensing of itinerant venders of medicine.

In section 11, the term "practising medicine" is thus defined: "Any person shall be regarded as practising medicine within the meaning of this act, who shall profess publicly to be a physician, and to prescribe for the sick, or who shall append to his name the letters, "M.D.". But nothing in this act shall be construed to prohibit gratuitous services in cases of emergency. And this act shall not apply to commissioned surgeons in the United States army and navy."

Similar legislation was soon introduced and enacted in other states, until nearly every state has now provided some form of restriction. In many, this function was given to the state board of health, and in a few of the newly constituted states this is the only duty of the state board of health.

The following important act of Massachusetts is referred to on page 42.

AN ACT TO PROTECT THE PURITY OF INLAND WATERS, AND TO REQUIRE CONSULTATION WITH THE STATE BOARD OF HEALTH REGARDING THE ESTABLISHMENT OF SYSTEMS OF WATER-SUPPLY, DRAINAGE AND SEWERAGE.

[Enacted June 9, 1886; amended May 18, 1888.]

§ 1 The state board of health shall have the general oversight and care of all inland waters, and shall be furnished with maps, plans and documents suitable for this purpose, and records of all its doings in relation thereto shall be kept. It may employ such engineers and clerks and other assistants as it may deem necessary: provided, that no contracts or other acts which involve the payment of money from the treasury of the Commonwealth shall be made or done without an appropriation expressly made therefor by the general court. It shall annually on or before the tenth day of January report to the general court its doings in the preceding year, and at the same time submit estimates of the sums required to meet the expenses of said board in relation to the care and oversight of inland waters for the ensuing year, and it shall also recommend legislation and suitable plans for such systems of main sewers as it may deem necessary for the preservation of the public health, and for the purification and prevention of the pollution of the ponds, streams and inland waters of the Commonwealth.

§ 2 Said board shall from time to time, as it may deem expedient, cause examinations of the said waters to be made for the purpose of ascertaining whether the same are adapted for use as sources of domestic water-supplies or are in a condition likely to impair the interests of the public or persons lawfully using the same, or imperil the public health. It shall recommend measures for prevention of the pollution of such waters, and for the removal of substances and causes of every kind which may be liable to cause pollution thereof, in order to protect and develop the rights and property of the commonwealth therein and to protect the public health. It shall have authority to conduct experiments to determine the best practicable methods of purification of drainage and sewage and disposal of the same. For the purposes aforesaid it may employ such expert assistance as may be necessary.

§ 3 It shall from time to time consult with and advise the authorities of cities and towns, or with corporations, firms or individuals, either already having or intending to introduce systems of water-supply, drainage or sewerage, as to the most appropriate source of supply, the best practicable method of assuring the purity thereof or of disposing of their

drainage or sewerage, having regard to the present and prospective needs and interest of other cities, towns, corporations, firms or individuals which may be affected thereby. It shall also from time to time consult with and advise persons or corporations engaged or intending to engage in any manufacturing or other business, drainage or sewage from which may tend to cause the pollution of any inland water, as to the best practicable method of preventing such pollution by the interception, disposal or purification of such drainage or sewage: provided, that no person shall be compelled to bear the expense of such consultation or advice, or of experiments made for the purposes of this act. All such authorities, corporations, firms and individuals are hereby required to give notice to said board of their intentions in the premises, and to submit for its advice outlines of their proposed plans or schemes in relation to water-supply and disposal of drainage and sewage, *and all petitions to the legislature for authority to introduce a system of water-supply, drainage or sewerage shall be accompanied by a copy of the recommendation and advice of the said board thereon.* Said board shall bring to the notice of the attorney-general all instances which may come to its knowledge of omission to comply with existing laws respecting the pollution of water-supplies and inland waters, and shall annually report to the legislature any specific cases not covered by the provisions of existing laws, which in its opinion call for further legislation.

§ 4 In this act the term "drainage" refers to rainfall, surface and subsoil water only, and "sewage" refers to domestic and manufacturing filth and refuse.

The essential amendment of 1888 in the foregoing act consists in the italicized clause in the third section.



Appendix IV

The following table, condensed from the U. S. census of 1890 relating to Vital and Social Statistics, vol. 2, p. 3, will be found useful for consultation in regard to several of the sanitary items considered in the foregoing monograph:

(28 cities of more than 100,000 population, 1890)

	Population, 1890	Number of persons to each acre	Number of dwellings	Number of persons to each dwelling	Number of miles of sewers	House connections	Per cent of city area in cemeteries	Railroads	
								Number of trains daily	Number of passengers carried annually
Allegheny . .	105 287	20.7	16 543	6.4	38	7 000	6.5	78	1 912 969
Baltimore . .	434 439	23.0	72 112	6.0	-	-	2.2	159	2 803 303
Boston . .	448 477	18.5	52 669	8.5	291	52 000	2.5	854	39 107 897
Brooklyn . .	806 343	44.6	82 222	9.2	380	83 512	4.2	474	3 297 801
Buffalo . .	255 664	10.2	37 290	6.9	219	32 000	1.3	126	1 929 669
Chicago . .	1 099 850	10.7	127 871	8.6	525	1	0.9	448	19 664 911
Cincinnati . .	296 908	20.0	33 487	8.9	98	7 447	0.7	162	4 253 250
Cleveland . .	261 353	16.4	43 835	6.0	146	14 000	1.0	38	388 931
Denver . .	106 713	10.1	18 010	5.9	61	1	1.0	54	398 780
Detroit . .	205 876	15.6	36 992	5.6	293	1	1.2	1	1
Indianapolis . .	105 436	15.1	21 138	5.0	30	1	0.3	1	135 216
Jersey City . .	163 003	19.6	18 562	8.8	57	21 440	0.2	499	867 514
Kansas City . .	132 716	6.4	23 140	5.7	114	1	0.8	67	947 200
Louisville . .	161 129	20.4	24 999	6.5	52	10 000	4.1	100	1 250 355
Milwaukee . .	204 468	12.8	32 888	6.2	183	17 070	0.1	1	1
Minneapolis . .	164 738	5.0	25 281	6.5	60	21 122	1.0	306	4 034 572
Newark . .	121 830	16.0	23 296	7.2	87	1	1.7	234	5 988 134
New Orleans . .	242 039	10.2	43 000	5.6	-	1	0.7	4	224 137
New York . .	1 515 301	52.9	81 222	12.5	464	123 000	1.6	1 135	32 090 623
Omaha . .	140 452	9.0	20 194	7.0	73	3 100	0.2	52	340 770
Philadelphia . .	1 046 964	12.6	127 052	5.6	376	100 000	1.5	636	15 152 999
Pittsburgh . .	238 617	13.8	37 725	6.3	87	6 742	3.7	235	5 525 293
Providence . .	132 146	14.1	17 639	7.5	64	5 700	4.3	109	552 466
Rochester . .	133 896	13.4	23 954	5.6	138	12 000	2.1	20	237 455
St. Louis . .	451 770	11.5	60 937	7.4	328	22 756	1.2	179	2 855 682
St. Paul . .	133 156	4.1	20 976	6.4	103	4 200	0.5	152	2 622 615
San Francisco . .	298 997	11.1	47 123	6.3	193	1	1.2	369	6 350 217
Washington . .	230 392	6.3	38 798	5.9	266	34 000	1.0	75	893 787

1) Not reported.

Appendix V
DAILY CONSUMPTION OF WATER PER CAPITA IN CERTAIN AMERICAN CITIES¹

	1875		1880		1885		1890		1895		1897	
	U. S. Gallons	Litres	U. S. Gallons	Litres	U. S. Gallons	Litres	U. S. Gallons	Litres	U. S. Gallons	Litres	U. S. Gallons	Litres
New York	91	344	77	291	73	276	85	322	92	348	109	413
Chicago	100	378	112	424	116	439	127	480	147	556	-	-
Philadelphia	69	261	68	257	72	272	132	500	150	567	215	814
Brooklyn	59	223	54	204	64	242	68	257	86	325	79	299
Boston ^a	69	261	87	329	73	276	83	314	107	405	112	424
St Louis	61	231	72	272	67	254	78	295	96	363	85	322
Cincinnati	60	227	76	288	64	242	115	435	124	469	124	469
Cleveland	44	167	65	246	93	352	106	401	130	492	-	-
Detroit	120	454	130	492	176	666	155	586	148	560	124	469
Milwaukee	29	110	106	401	105	397	114	431	108	409	90	341
Louisville	24	91	42	159	62	235	71	269	75	284	-	-
Providence	-	-	34	129	37	140	46	174	63	238	52	197
Lowell	24	91	38	144	56	212	69	261	79	299	-	-
Fall River	18	68	28	106	26	98	28	106	27	102	-	-
Cambridge	57	216	46	174	51	193	65	246	80	303	-	-
New Bedford	-	-	-	-	85	322	98	371	91	344	-	-
Lynn	40	151	32	121	42	159	45	170	54	204	-	-

¹) From table compiled by D. Brackett, C. E.

²) *Report of Metropolitan water board, 1895. p. 158, 159.*

Appendix VI

DEATH-RATE FROM TYPHOID FEVER IN CERTAIN CITIES OF THE UNITED STATES HAVING A POPULATION OF MORE THAN 50,000 IN EACH¹

(per 100,000 population)

	1890	1891	1892	1893	1894	1895	1896	1897	1898
Albany . . .	60	108	50	59	52	165	-	-	95
Baltimore . . .	57	34	42	47	49	28	37	36	36
Boston . . .	43	33	25	26	23	32	31	33	35
Brooklyn . . .	21	21	18	18	15	16	15	-	-
Buffalo . . .	44	56	38	37	62	28	19	18	28
Cambridge . . .	34	20	20	21	29	15	36	13	16
Chicago . . .	83	160	103	42	31	32	47	26	36
Cincinnati . . .	67	62	40	43	50	36	34	47	30
Cleveland . . .	66	52	54	47	27	36	41	21	35
Columbus . . .	74	51	46	45	48	51	-	-	-
Detroit . . .	18	13	51	61	26	24	19	12	18
Denver . . .	217	93	53	57	35	30	61	-	-
Fall River . . .	62	65	38	20	29	33	27	33	21
Jersey City . . .	97	102	73	68	56	73	75	90	51
Lawrence . . .	134	119	105	80	48	31	26	25	16
Lowell . . .	82	99	90	68	62	39	42	21	27
Lynn . . .	20	21	22	22	19	24	42	29	22
Milwaukee . . .	33	33	31	37	26	25	17	12	17
Minneapolis . . .	41	45	36	60	45	38	30	73	41
Newark . . .	63	96	42	22	17	23	21	14	-
New Bedford . . .	20	21	34	62	26	20	24	37	26
New Haven . . .	28	20	29	31	26	34	32	24	37
New Orleans . . .	20	23	21	15	28	41	33	50	63
New York . . .	21	22	14	20	17	17	16	-	-
Omaha . . .	36	20	13	14	25	12	-	-	-
Paterson . . .	29	21	18	40	37	21	47	32	-
Philadelphia . . .	64	64	34	41	32	-	33	33	53
Pittsburgh . . .	131	100	100	111	56	77	63	66	73
Providence . . .	29	47	36	34	49	31	27	15	24
Richmond . . .	88	60	68	53	31	27	-	-	-
Rochester . . .	33	36	52	39	12	24	16	19	-
San Francisco . . .	45	34	32	34	37	32	29	21	16
Scranton . . .	57	54	93	62	82	105	-	-	-
St Louis . . .	34	30	37	103	31	19	20	-	17
Somerville . . .	22	31	32	30	29	21	47	19	18
Springfield . . .	32	35	83	35	31	19	21	27	26
Syracuse . . .	33	49	34	31	45	-	-	-	-
Toledo . . .	42	26	37	28	26	35	27	-	24
Washington . . .	89	86	72	72	72	69	83	53	46
Worcester . . .	17	21	57	33	32	25	14	14	12

¹) Partly from *Fuertes' Water and public health*, p. 47, and reports of state and city boards of health and from correspondence.

Note on the normal chlorine map of Massachusetts

This map appears among the wing-frames in the Massachusetts portion of the exhibit.

It was the result of continuous and careful analysis of a large number of samples of unpolluted waters of Massachusetts, such as existed in the numerous springs, brooks and small streams of the state, at points above all possibility of pollution. By connecting the points indicating places where waters were collected for analysis, lines were drawn showing that a natural law existed to the effect that the amount of chlorine in the unpolluted waters diminished with considerable regularity from the seacoast inward.

The map has been found very useful as a standard for the purpose of determining the actual pollution of any given sample of water, as compared with the normal amount existing in the district from which it was obtained.

A similar map is shown by the state board of health of Connecticut, being the result of similar observations in that state, the lines being continuous with those of Massachusetts.

DEPARTMENT OF SOCIAL ECONOMY
FOR THE
UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1900

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GENERAL WILLIAM BOOTH
FOUNDER OF THE SALVATION ARMY



COMMANDER AND CONSUL BOOTH TUCKER, IN CHARGE OF THE SALVATION ARMY WORK
IN THE UNITED STATES



SOCIAL RELIEF WORK OF THE SALVATION ARMY IN THE UNITED STATES

CHAPTER I.

GENESIS OF THE SALVATION ARMY

The mudpools of society possess a peculiar interest for the sociologist, be he humanitarian or statesman. Hunger amounting to positive starvation, destitution that means the actual lack of the most common necessities of existence, misery that represents a Niagara of tears, intertangled with a ghastly profusion of blasphemy, vermin, vice and crime, constitute a dark background to what would indeed be a loathsome picture, but for the fact that it is illumined with lightning flashes of love, piety and patient endurance, whose existence might least be suspected amid such sad surroundings. Here the dividing line between earth and hell becomes so hard to locate that those who inhabit this sombre shadowland of woe oftentimes feel and seem as though they had already passed from the one to the other.

Into this desolate region the Salvation army flung itself, nay from its very vortex of misery it may be said to have originated. The international developments and multitudinous outgrowths of the movement were represented at its inception by two solitary individuals, whom Providence had first linked together, and then plunged into the midst of this maelstrom of sin and sorrow. Singlehanded, unsupported by material resources of any kind, William and Catherine Booth planted the standard of salvation as near the gates of hell as they could reach.

It was in July, 1865, on Mile End Waste, in the east end of London, amid vice, degradation and squalor probably without parallel in any corner of the globe, that they commenced their work of spiritual and social reform.

They adapted their methods to the savage hordes of semi-barbarians to whom they had consecrated their lives. Their first citadels were planted in the heart of sindom and slumdom. Over the doorway of one of these was written the strange inscription: "No respectable people admitted." The sinners they were after gloried in their savagery. Their Bible was the "penny dreadful," their place of worship the saloon, their god their unbridled appetites, their prayer hideous blasphemy. No church-door was ever darkened with their shadow. They were neither expected, nor wanted. The sight of their unkempt condition would have driven away the usual worshippers.

But the dime museums and "penny gaffs," which these misfits of humanity had been accustomed to frequent, were pressed into service by this Prophet of the poor. They were quickly crowded to the doors with the rowdy element he sought to reach. Amongst the earliest converts were prize-fighters, pigeon-flyers, gamblers, drunkards, criminals, many of them notorious for their wickedness.

Each captured gun was turned against the enemy. Each prisoner of war was drilled as a recruit. His simple testimony became a powerful weapon of offense. Multitudes who would not cross the road to hear a preacher, crowded to hear the broken sentences of the champion ~~wrestler~~, or lightweight boxer who had been their hero. Here they could listen to the simple vernacular to which they were themselves accustomed. The very breakdowns of the speakers were more interesting than the polished flights of the most eloquent orator. Their arguments were resistless. What they recommended they possessed. What they had gained was surely within each listener's reach, since their circumstances and surroundings were the same.

The powerful influence of woman's ministry was also introduced, and helped to sway the savage throng. Riots were quelled and bloodshed prevented by those fearless, calm-eyed women, often mere girls, who dared to cast themselves into this lion's den of humanity.



NATIONAL HEADQUARTERS FOR AMERICA, 120-124 WEST 14TH ST., NEW YORK



Even the music and singing were revolutionized for the purposes of this modern crusade. The popular tap-room melodies of the day were fitted to suitable words, so simple that a child could understand,—often mere doggerel, it was true, and not always either rhythmical or grammatical. If they conveyed their meaning, that was the great point. Would the tune “go?” If not, however beautiful it might be, it was ruthlessly discarded as unsuited for the great end in view.

Military methods and titles were not added till the year 1879. They undoubtedly served to lend speed and strength to the movement.

The work was commenced on purely spiritual lines. The founder, William Booth, had already attained national fame as a revivalist. Not a little of his inspiration had been drawn from the two great American evangelists, Caughey and Finney. The passionate fervor of the one, the logical precision of the other, may be traced in much of the army teachings and operations. Indeed it may be said that America was represented at the very cradle of the Salvation army.

It is not to be wondered therefore that the Salvation army had scarcely become firmly established in England, when its operations were extended to America. One of its early converts settled in Cleveland, Ohio, in 1872, and immediately commenced work. After his departure nothing further was done till 1880, when another convert settled in Philadelphia. In the following year, in answer to an urgent appeal, reinforcements were dispatched under Commissioner George S. Railton, and from that moment the work went forward apace.

The present operations of the Salvation army in the United States embrace the following particulars:

Seven hundred corps and outposts; 2600 officers and employees; 160 social relief institutions for the poor; 450 officers and employees in charge of same; 7000 accommodation provided by social institutions; 11,000 open-air and

indoor meetings held weekly; 2,200,000 average number of persons attending meetings weekly; 20,000 unpaid workers mostly wearing uniform; 50,000 average number of yearly conversions; 52 shelters for men and women; 5000 accommodation in same; 23 cheap food depots; 19 salvage brigades and workshops for the unemployed; 222 accommodation in same; 51 officers and employees in charge; 17 trades and industries; 8 labor bureaus; 3 farm colonies; 1800 acres of land; 200 colonists, including men, women and children; 20 slum posts; 41 slum officers; 14 rescue homes for fallen women; 360 accommodation in same; 1000 girls permanently or temporarily helped; 2 children's homes for waifs and strays; 66 accommodation in same.

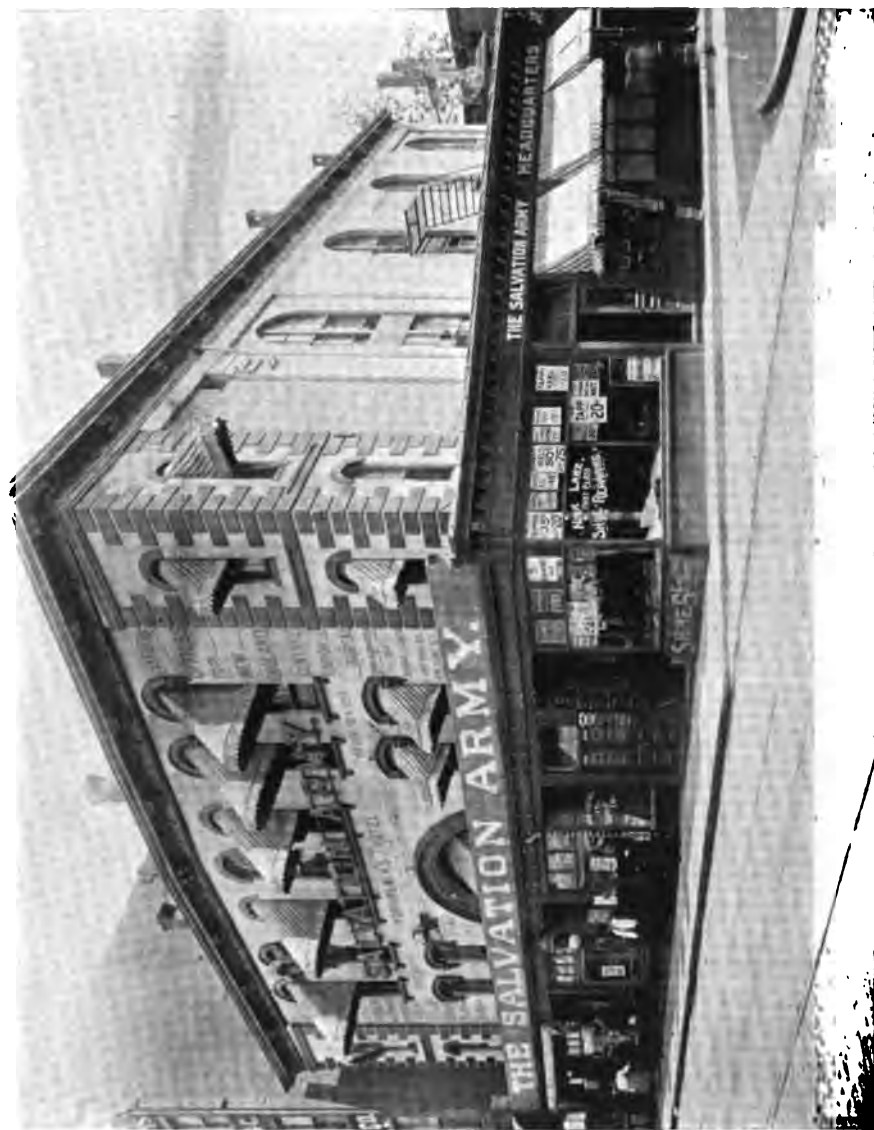
CHAPTER 2

SOCIAL SALVATION

As its name signifies, the Salvation army was originally started with the sole aim of reaching the non-church-going masses with the Gospel. Here was the appalling statement made by those who had given the matter years of patient study, that 90% of the working classes in the older civilizations of Europe habitually neglected public worship and had practically cut themselves loose from even the outward profession of religion. It was to remedy this condition of affairs that William and Catherine Booth set to work.

As evangelists they could crowd the largest buildings with the vast crowds who flocked to their meetings. Their converts were numbered by thousands. Yet they could not fail to notice and mourn over the fact that those who came were mostly church-goers and professors of religion. The godless multitudes drifted past their doors. To reach them, other methods must be pursued. Their habits must be studied and they must be followed to their haunts and hiding-places.

When, however, this had been done, it became daily more and more evident that the evils to be combatted were of a



SALVATION ARMY DIVISIONAL HEADQUARTERS FOR NEW ENGLAND AND CENTRAL WORKINGMEN'S HOTEL, BOSTON, MASS.



temporal as well as of a spiritual character. Churchlessness was with these classes the natural outcome of homelessness, worklessness and worthlessness. To combat the evil, its causes must be radically dealt with. The task was truly a gigantic one. But General Booth was not the man to shrink from it. Cautiously and experimentally at first, and finally with the confidence that was the natural outcome of repeated success, he grappled with the problem.

In traversing and transforming these melancholy wastes of woe, root principles were discovered and laid down for the guidance of the legion of well-trained workers who had been rapidly enrolled.

The poor were to be treated with love, and not with suspicion or contempt.

They were to be classified, not as the worthy and unworthy, but as those who were willing to work out their own regeneration, and the unwilling.

They were to be encouraged in every possible way to become their own deliverers.

Each institution was to aim at self-support by the labor or payments of its inmates.

Social reform to be complete must include the soul as well as the body. In other words the man himself must be changed and not merely his circumstances.

To save a man for this world should be but a stepping-stone toward saving him for the next.

Finally, in the fall of 1890, the outcome of the previous year's experiments was tabulated and published by General Booth in a book which quickly received world-wide recognition. The publication of *In darkest England and the way out* undoubtedly marked a new era in the history of sociology. The problems which were discussed in those pages with masterly ability were quickly recognized as belonging to the world rather than to any single country, and the remedies suggested commended themselves to the ablest students of the question.

In England a fund of \$600,000 was subscribed in the course of a few days to enable General Booth to put his plans into operation on a larger scale. That the confidence thus manifested toward him was not misplaced has been universally acknowledged and is proven by the following statistics, showing the vast scale upon which those operations are now being conducted throughout the world. The figures given are for the 12 months ending June 30, 1899. It would be safe to add at least 20% to these figures on account of recently opened institutions for which returns were not complete:

One hundred and fifty-eight food depots and shelters for men and women; 13,533 sleeping accommodation in same; 3,697,860 beds supplied during year; 5,968,365 meals supplied during year; 60 workshops and salvage brigades for temporary employment of out-of-works; 48,512 persons supplied with work in same; 37 labor bureaus; 6367 persons found situations; 17 children's homes and day nurseries; 23,245 children sheltered; 11 farm colonies; 5562 acres of land occupied; 450 colonists, including men, women and children; 121 slum posts; 464,113 hours spent in slum visitation; 11 homes for ex-criminals; 382 accommodation in same; 1626 ex-criminals passed through during year; 1393 satisfactory cases; 91 rescue homes for fallen women; 1894 accommodation in same; 5132 girls passed through during year; 3449 satisfactory cases; 1604 missing persons found during year; 39 other social institutions; 545 total social institutions; 2062 officers and employees in charge of same.

CHAPTER 3

THE PROBLEM OF POVERTY IN AMERICA

Pauperdom has undoubtedly not attained the same proportions in America as in the older civilizations of Europe. Probably the percentage in the former is not more than five, whereas in the latter it is estimated at 10.

The census of 1890 shows that the inmates of public and private institutions for paupers and criminals numbered no less than 340,000, while at least 10 times that number pass through these institutions during the year. It is fair, therefore, to estimate the numbers of those who live on the borders of pauperdom in the United States at not less than 3,000,000 souls.

This estimate is confirmed by the fact that during the exceptionally prosperous conditions now existing the returns of the various labor unions in the state of New York show that 10% of their members are out of work. For the previous quarter the average was 18%, and in ordinary seasons, apart from any unusual depression, the percentage is considerably higher.

It is fair to suppose that the condition of the wage-earners who are members of unions is an index of the condition of nonunion labor, the probability being that there is a larger proportion of out-of-works among the latter than the former.

From the above facts it may be regarded as certain that the "submerged" classes in America, including the criminal, the vicious and the purely pauper elements, number not less than 3,000,000 under favorable sociological circumstances, while the number is liable to increase alarmingly during seasons of commercial depression.

For dealing with this mass of poverty and suffering the Salvation army in the United States has organized the various institutions and agencies described in the following pages.

These include:

Shelters for homeless men; shelters for homeless women; homes for clerks and artisans; homes for girls working in stores and offices; homes for children; rescue homes for fallen women; slum posts for slum visitation and meetings; slum day nurseries for infants; cheap food depots and cent-meals; cheap clothing and second-hand stores; salvage brigades for collection of household and office waste; woodyards; employment

bureaus; Knights of hope for prison visitation and ex-criminals; winter relief; medical relief, including free hospital and dispensaries; summer outings for the poor; ~~penny ice wagons~~; Christmas and Thanksgiving dinners; missing friends and inquiry department; farm colonies for the poor.

The complex character of the remedies above indicated has been necessitated by the complex nature of the evil to be dealt with. To the uninitiated eye poverty appears to be one seething cauldron of dirt, rags, hunger, hypocrisy and misery. To the skilled eye of our officers, who devote their lives to the practical task of combatting the evil, the poor may be divided into classes which are as sharply defined and unmixable as the castes of the Hindoos, or the stratas of geology. To deal successfully with the monster of poverty, each of its hydra heads must be separately handled, with methods peculiar to itself and with a staff of workers who are trained to become experts in their own particular department, whilst the sunshine of love and the tender showers of Gospel grace are made to permeate the mass.

CHAPTER 4

SHELTERS FOR HOMELESS MEN

Every large city in America has its quota of homeless men. Their home, if such it can be called, is the low lodging-house. As a rule the accommodation is of the meanest character. The rooms and bedding abound with vermin, making sleep well-nigh impossible.

Let me describe a night spent in one of these dens in New York. The building was a tall brick structure, with accommodation for perhaps 300 men. As I passed across a kind of gangway, my guide, who was one of our slum soldiers, informed me that more than one murder had been committed on that dark spot, the victims being flung into a sort of cellar below. We were directed to a large room, the only furniture



SALVATION ARMY WORKINGMEN'S HOTEL, PHILADELPHIA



of which consisted of a large stove and about 50 canvas hammocks, slung in double-decker fashion from a couple of bars that ran the length of the room. All the lower hammocks being occupied, I had to content myself with an upper. It was a bitterly cold night, but the fire was out, and there was no bedding. The cold alone made sleep impossible. The one rough article of clothing which I took off formed my pillow. Beneath it I placed my shoes, which would otherwise probably have been missing by daylight. The hacking coughs of many of the men showed that hardship and exposure were rapidly doing their work. In spite of the vermin, the cold and the noises I dozed off for a few moments. Whether I dreamed or snored I can not say, but I woke up in time to hear the man who was sleeping under me say to another who was wandering about the room, perhaps seeing what he could pick up, "There's a bum in that doss!" "Stick a pin into him!" responded the other. "Go and fetch the boss," remarked some one else. The speakers evidently had no idea that the "bum" in the "doss" was the commander of the Salvation army, personally investigating the condition of the working classes, and the sort of accommodation afforded them in an average lodging-house in New York!

Since that day we have opened in and around New York six workingmen's shelters, accommodating 736 homeless men. An iron spring bed with mattress, pillow, sheets and blankets can be obtained for 10 cents, while those who prefer a room to themselves can obtain one for an additional nickel. Each dormitory is warmed with a stove, while hot and cold baths, wash-tubs and a reading-room are provided free of charge. The officer in command takes a kindly interest in the men, gets to know each of them individually and helps to find them employment when out of work.

Similar institutions have been provided in the following cities: Chicago, Boston, Philadelphia, Cleveland, Toledo, Pittsburg, Providence, Buffalo, Rochester, Syracuse, Fall

River, Waterbury, Cincinnati, Louisville, Nashville, St Louis, Springfield, Ill., Little Rock, Kansas City, Denver, Cripple Creek, Salt Lake City, Portland, Ore., and San Francisco. In some of the largest of these cities from two to five shelters have been opened, and there appears no end to the possibilities of developing this class of work.

To remove these men from the contaminating surroundings of the moral cesspools which they are otherwise compelled to frequent, and to encircle them with healthy, holy influences, is a work the importance of which it is impossible to exaggerate. We have now 45 shelters for homeless men in the United States, with accommodation for 5000 persons.

CHAPTER 5

SHELTERS FOR HOMELESS WOMEN

Happily the number of homeless women is far less than that of homeless men. Nevertheless most large cities possess a considerable and alas increasing class of those whose relations have died, or deserted them, and who pick up a scanty subsistence by charring, cleaning offices and doing odd jobs, or selling cheap wares in the streets. They are less migratory than the men, and soon make our shelters their permanent "home."

Some of them have been addicted to liquor. "We can always get a drink for nothing from some friendly saloon-keeper by doing some odd job for him, such as cleaning the windows, when we can not get either money or food," said one of these women apologetically to the shelter officer, who had charged her with drinking. "It stops the cravings of hunger," she added.

The warmth, the light, the cleanliness of our shelters, and above all the kindness with which they are treated, serve to work a speedy reformation. "Some of them," said a shelter officer, "exhibit symptoms of hydrophobia at the very sight



SALVATION HOTEL FOR YOUNG WOMEN EMPLOYED IN STORES



of water, when they first come to us. But they soon get to appreciate the value of cleanliness, and many of them give their hearts to God. Saddest of all is, when we have to turn some away, because every bed is occupied. Oh how they plead with us just to let them sleep on the floor, or in the passages."

Our New York shelter was commenced in a building just off Chatham Square. Our license allowed only 44 beds. These were soon regularly occupied, and we took a larger building in the heart of the Bowery, with accommodation for 100. During the summer months the attendance has steadily increased so that the beds are now all occupied, and numbers have to be turned away. A second building has already become necessary.

In Chicago and San Francisco similar shelters have been opened, although on a smaller scale, with similar results.

Perhaps no sight is sadder than that of these homeless and friendless women, struggling bravely to earn the pittance which shall enable them to keep out of the dreaded poorhouse. The census states that 74,521 of the women in the national public and private institutions for the poor assign as the cause of their dependence the "want of another home," while 94% of them are stated to be "able-bodied," capable, that is, of some moderate amount of work. In the majority of cases they are not even to be blamed for their condition. The death of the bread-winner, abandonment, or misfortune have, in most cases, brought them to the border land of destitution. And yet they struggle bravely on, glad and thankful if they can only be independent of society's aid, with no hope of the honored rest their silvered hair and stoop of age might claim.

Tenderly our officers minister to their spiritual, as well as temporal needs, and the joy of a future "home" and "rest" for their soul palliates the toil and loneliness of their present lot.

CHAPTER 6

HOMES FOR ARTISANS

In several cities homes have been opened, where clerks, storemen and others of the artisan classes can get accommodation a little superior to that provided in our ordinary shelters, and yet for a very small outlay. This has been greatly appreciated, and has helped to constitute a step upwards for many of those whom our cheaper institutions have rescued from the lowest depths of suffering, besides acting as a valuable prevention for numbers who were in danger of lapsing into the same condition.

In many of our large shelters a separate floor with superior accommodation at a slightly increased charge is set apart for this purpose, thus avoiding the expense of renting an extra building and requiring an additional staff.

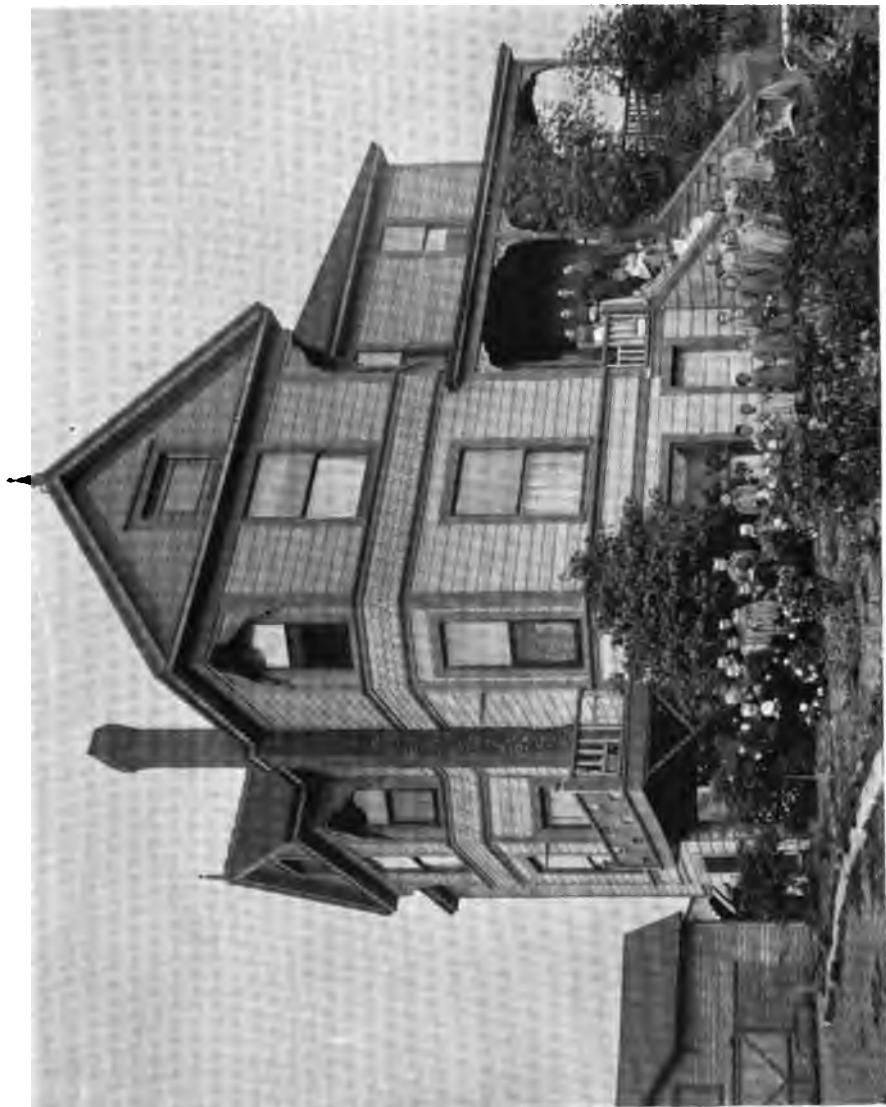
It is found preferable, however, where there is a sufficient demand, to have an entirely separate building. This has already been done, with excellent effect in Boston and Kansas City.

These moral safeguards from the pernicious influences which drag down so many of our young men may well be multiplied.

CHAPTER 7

HOMES FOR WORKING GIRLS

In all the large cities of the United States thousands of young women are employed in the stores and offices. While many of those have happily homes of their own, a vast proportion are obliged to board out. The inducements to vice are terrible. To pay for rent and food out of the \$4 to \$6 a week which their wages average, besides dressing with the neatness which their employers demand, is well-nigh impossible. To starve or sell their virtue becomes the painful alternative. At least the gateway of vice is dangerously near and



SALVATION ARMY ORPHANAGE, SAN FRANCISCO



wide open to those young and inexperienced feet. To help them after they have fallen is good,—to prevent their fall is infinitely better.

A painful story is told of a young girl in one of our cities applying vainly for admission at the door of the various institutions. She could not be received because she had not fallen. Driven to despair, she returned soon afterwards saying, "Now I have done what you wanted. Now I am truly fallen and I have a right to claim admission."

There can be no doubt that cheap homes for respectable young women are daily becoming a greater necessity in our cities. We have already established several such.

Our home in Boston has been named after the late Washington Benedict, who was deeply interested in the establishment of such an institution. Our Flower home in Los Angeles was presented to the Salvation army by the ladies' committee, who had been managing it for several years. The property is valued at \$20,000, and is beautifully situated in the center of the city. The officer in charge holds a medical diploma.

CHAPTER 8

CHILDREN'S HOMES

"Damned into the world rather than born into it," some one has said, are the children of our slums. The tenements of our great cities swarm with those who answer to this pitiful description. Cradled from their infancy in disease, misery, vice and crime, little wonder that many of them grow up to be the terrors of the society that has so often neglected them.

Often the only fault of the parents is their poverty. "It is only that I am hungry, but mother says I must not tell!" said a little boy, who had fainted away in one of our meetings. And then the sad story leaked out. His father, an honest working man, had been out of employment for weeks. In vain had he walked the streets day after day in search of work. For some time the mother had painfully bat-

tled with the wolf at the door by means of needle-work. Finally she had broken down beneath the strain. She was ill in bed, and the seven children were literally starving. There was no food in the attic which served as home. Help was quickly sent, the father was found work, and before long the whole family was comfortably established in a little home. It was a cold Christmas and the snow was on the ground. Little Freddy ran to the window, threw it open and flung out a handful of crumbs for the birds. "See, mama," he cried gleefully, "last Christmas we had no crumbs for ourselves. This Christmas we have plenty for the birds as well."

Our New York and San Francisco homes for orphans and destitute children accommodate about 60 such, and every available bed is occupied, while we are reluctantly compelled to refuse many a little needy lamb, it being impossible to make this branch of our operations self-supporting, as we are able to do with most of the others.

It is intended at an early date to establish a branch home on one of our farm colonies, with a special view to teaching the children agricultural pursuits and finally planting them out in homes of their own. This seems preferable to the existing plan of placing them out in the families of farmers, as under our system they will become homeowners and not merely farm laborers.

CHAPTER 9

RESCUE HOMES FOR FALLEN WOMEN

It is estimated that in the United States alone no less than 50,000 girls annually pass from the ranks of the fallen to a premature grave. Their places, alas, are quickly taken by others, so that there is no apparent diminution in the volume of vice which pours its Niagara of woe through our streets and homes.

More sinned against than sinning, the doors of society are closed tightly against these human derelicts, the wreckage and wreckers of our homes and youth.



WORK ROOM IN THE SALVATION ARMY RESCUE HOME, NEW YORK



To deal with them successfully it has been found necessary to organize an entirely different set of institutions, or rather homes, under the supervision of a staff of officers who are trained wholly and solely for this class of work, and who thus acquire an experience and achieve a success which would not otherwise be possible.

Fourteen homes with accommodation for 360 girls have been established in the following cities of the United States: New York, Boston, Chicago, St Louis, Philadelphia, Cleveland, Buffalo, Grand Rapids, St Paul, Omaha, Des Moines, Portland, Los Angeles and San Francisco.

Including preventive cases and those who have only stayed a few days, about 1000 girls have passed through these homes during the past year. The percentage of satisfactory cases is more than 80%.

We aim at keeping the girls about four months in the home. They help to meet their expenses by various kinds of needle-work, such as the making of texts, uniforms and garments, as well as by bookbinding, chicken-raising and other occupations. The majority of them are trained for housework and sent out to suitable situations. The value of work done in the homes during the last 12 months amounted to nearly \$3000.

At the time of writing, 60 babies are being cared for in the homes, indeed the maternity department of this work is assuming increasing importance.

A volume could easily be filled with the sad stories of betrayal, of cruelty and crime, which are poured into the ears of our officers by these unhappy victims of vice. But a single instance must suffice.

It was a cold miserable evening in winter. A woman stood on the banks of the Mississippi, her babe wrapped in her arms. She had made up her mind to bury her sorrows in the waters of the river. Home and friends had closed their doors against her. The one for whose sake she had risked all had deserted

her. Death itself seemed preferable to such an existence as had fallen to her lot.

Just then a drum-beat, followed by music and singing, fell upon her ear. It was the nightly march and open-air of the Salvation army. Nearer and nearer they drew. Not far from the spot where the would-be suicide was standing they halted, formed a ring and commenced their service. The quick eye of the girl-captain read the despair that was imprinted on that fair young face. A few kind words of sympathy drew her to the hall, and before the meeting closed, the story of sorrow and shame had been whispered into the captain's ear, and salvation sought at the cross.

One of our rescue homes quickly opened its doors to receive the Magdalene and her babe, and then in due course a position of usefulness was found, with an opportunity to start the voyage of life under new and happier auspices. Some years later the incident was related in a public meeting. A well-dressed woman rose and asked permission to speak. "The story you have heard is all true," she said. "I am the woman referred to. I have now a happy home and a good husband, and can not express my gratitude to the army for having saved me from a suicide's grave and brought me to a knowledge of salvation."

CHAPTER 10

SLUM WORK

Who has not heard of "Hell's Kitchen," "The Bowery," "The Tenderloin," or "Cherry street?" The very names have become world-famous, as synonyms for debauchery, slumdom and crime. In the very heart of these citadels of sin the Salvation army has planted its outposts. The girl-warriors who have dared to storm these "forts of darkness" have done so in the first instance at the risk of their lives. Pelted with refuse, treated with ignominy, threatened with violence, they have persisted in their noble work, till a permanent footing has been gained.

Now, how different is their position. They are known by the name of "slum angels." At any hour of the day or night they can walk down streets or alleys where the police will only pass in twos. If a fight is going on, they will make straight for the center of the crowd, as the recognized peacemakers of the poor, and woe betide the man who lays a finger upon them. The worst dives and saloons are open to their ministrations.

"There are only two saloons," says the officer in charge of our Chicago slumwork, "where our girls are not admitted, and these two are visited by them regularly every week. When the boss says, 'Did I not tell you not to come here any more?' the captain replies, 'Yes, sir! But I have come to see whether you have changed your mind!'"

In the city of Cleveland one of the most notorious saloon-keepers and criminals was converted and has stood faithful for some years past. When his saloon was first visited by our women officers, he poured a schooner of beer down their backs as they knelt to pray! This man was popularly known as "The Ferret." His picture hangs in the Rogues' gallery of the United States, but the face has been turned to the wall, since the police are well aware that Fred Ford is converted and is earning an honest living.

Our slum officers live in the heart of slumdom, and minister day and night to the sick and suffering. In order to make themselves more one with the people they have adopted an even simpler and humbler garb than that worn by our ordinary officers. A poke bonnet would appear too respectable, and even extravagant, to those whose lives are spent in one long desperate struggle with poverty.

In New York alone we have 20 slum officers entirely set apart for work of this character, while other slum posts have been opened in Boston, Chicago, Philadelphia, Providence, Cincinnati, Cleveland and St. Louis.

Not the least important feature of the slum officer's work

is her nightly meeting. Gathered together in her hall is an intensely interesting collection of the toughest characters in the city. With wonderful skill and patience she handles them. Strange to say, although the meetings are of a strictly religious character, they possess for these wastrels of society a peculiar fascination. The greatest punishment that can be inflicted for a serious breach of discipline is exclusion from the meetings for a time. To see the girl captain march off a disturber of the peace, maintain order and go on with the meeting, as if nothing particular had happened, is in itself a marvel of spiritual conquest and control.

These Jeanne d'Arcs of the slums are filled with a sense of their divine mission and are accepted by their rough hearers as the modern apostles of "Poverty Row."

CHAPTER II

SLUM CRECHE OR DAY NURSERY

It was found by our slum officers in the course of their visitations that in many families where the mother was the breadwinner, she would go forth in the morning, locking the door on her babe, till she returned home in the evening. What else could she do? It was impossible for her to take baby with her to her work.

Hence a slum creche soon became a necessary adjunct to this portion of our work. The mother brings her baby in the morning, leaves it for the day, and fetches it away in the evening. Wonderful reformations have thus been wrought in the way of cleanliness and health, as well as moral surroundings.

The little ones learn to sing the army songs and carry back to their miserable garrets an atmosphere of joy and brightness which has hitherto been unknown. A small charge of five cents is made to cover the cost of milk and food.

Occasionally the mother, who called in the morning, appears no more to claim the child, and then it becomes necessary to find some permanent home. But kind friends seldom fail to return a ready response to our appeal.

CHAPTER 12

CHEAP FOOD DEPOTS AND CENT MEALS

The provision of cheap, wholesome food for the poor at prices within their reach has become one of the most important branches of our work. In a single month 110,584 meals were furnished, being at the rate of more than 1,300,000 per year.

In some cases "cent meals" have been established with a special view of reaching the poor in their homes. For one cent a pint of coffee with a chunk of bread, or if preferred, a basin of soup, will be furnished. This can either be taken home or eaten on the premises.

Thus help and hope are brought to the doors of many who are too proud to make their wants known even to their dearest friends. It is by such that the pinch of poverty is the most severely felt, and it is they who are the most deserving of help, being so eager to do all in their power to help themselves.

It is sad to admit that with our advanced civilization multitudes should suffer from the actual gnawings of hunger, and yet such is undoubtedly the case. An old woman was found ill in her garret. For days she had not tasted food. She had struggled bravely on, supporting herself and her granddaughter, till sickness had laid her aside. Yet there was no spirit of complaint. Grateful for the help that had been brought, she explained to the officer who was caring for her that she had discovered a splendid remedy for the pangs of hunger when she had no food, and that was to drink hot water with a pinch of salt. "Have you ever tried it?" she asked. "You will find it wonderful for taking away the craving."

Not long ago it was stated by the teachers of the New York public schools that the children frequently came breakfastless to their lessons and that the only luncheon many of them brought was a paltry sandwich, consisting of two thin slices of

bread, with some vegetable or cheese sliced between. And yet, so sensitive were the children about accepting anything that savored of "charity," that they would refuse food when it was proffered to them free of charge. It was only by inviting one and another to share their meal as a special treat, that the teacher could prevail on them to accept anything beyond the scanty meal they brought.

CHAPTER 13.

CHEAP CLOTHING AND SECOND-HAND STORES

Next to the need for food and shelter comes that for clothing during our inclement winter. To provide for this, "junk shops" have been opened in some of our large cities, where second-hand articles of clothing can be bought by the poor for nominal sums. Our store in Chicago employs seven persons. Shoes are repaired, articles of clothing mended and furniture renewed, and then sold at prices which bring them within reach of all.

During the terrible blizzard of 1899 when trains were blocked and traffic obstructed the suffering among the poor was most acute. A woman came to our headquarters through the snow which was piled several feet high in the streets. A babe was in her arms, but a few weeks old, wrapped in a piece of China cloth. Her own garments were scarcely better. She was gladly supplied with what she needed. "Do not think me ungrateful," she said, when rising to leave, "if I ask you to find me one thing more. Could you let me have a pair of old shoes?" It was then that the fact was discovered that she had nothing but a little brown paper which she had placed between her stockings and the soles of her shoeless feet to protect her during that terrible tramp through the snow. Her gratitude was unbounded when this need also had been met.

CHAPTER 14

SALVAGE BRIGADES FOR THE COLLECTION OF WASTE

The urgent necessity of finding temporary employment for the out-of-works led to the conception of the collection of household and office waste. The fact that those who needed help came from so many different trades, and that it would have required a vast amount of capital to employ each in what he might happen to know, made it necessary to look out for plans which would be suitable for all sorts of labor, whether skilled or unskilled.

To collect and sell waste paper, clothing, shoes, old furniture, packing cases, bottles and articles of a similar character has been found to supply a maximum of work at a minimum of cost. The income from the sale of such goods has been usually sufficient to almost cover working expenses, the chief difficulty being to obtain the capital necessary to purchase teams, and fit up suitable buildings.

The most extensive and successful salvage brigade hitherto established is in the city of Chicago, where we have taken a contract for keeping the streets in several wards free from waste paper. Some 25 tons of waste paper are weekly handled by the brigade.

In the city of Boston 500 baskets have been placed in the houses of citizens. These are periodically cleared, and the contents disposed of through our junk store.

Salvage brigades have also been established in Brooklyn, Jersey City and Newark.

CHAPTER 15.

WOODYARDS

In some cities woodyards have been started for the temporary employment of out-of-works. The necessity of finding capital for the purchase of lumber, and the difficulty of competing with machine-cut wood, has prevented us from extending

this class of work on the scale that we should desire. It is, however, one of the best and simplest plans for utilizing waste labor during periods of temporary depression.

Our principal woodyards are in Waterbury, Boston, Houston, San Francisco and Seattle.

CHAPTER 16

EMPLOYMENT BUREAU

The lamentable fact that employment agencies have been so largely used by unprincipled persons for decoying the poor and fleecing them of their money, makes it the more important that strictly honest agencies should be multiplied for bringing together the employer and employed. At the same time the severely repressive enactments and high license fees which have been established in most states as a check to malpractices, have prevented us from advancing as rapidly as we could have desired.

Nevertheless in the last month for which our statistical particulars are available, we succeeded in finding work for no less than 4797 persons, being at the rate of nearly 60,000 per annum.

CHAPTER 17

KNIGHTS OF HOPE, FOR WORK AMONG PRISONERS

In many of the prisons throughout the country we are permitted to conduct regular services. In some of them we have been allowed to enroll the converts as Salvationists. The officials speak highly in regard to the good conduct of these men, and in times of emergency they have been known to render excellent service.

In one case a notorious murderer was converted, and was permitted to conduct a Bible-class among some eight men who were being tried or had been sentenced for a similar offense. This resulted in the conversion of several of the others.

But it has been the ex-criminal who has been the special object of our solicitude. When his sentence has expired his

position is indeed painful. It is only natural that employers should be very unwilling to offer him work. But should he succeed in finding a place, he will commonly be blackmailed by his old associates and compelled to pay them nearly all his earnings, under threat of losing his position by his employer being informed about the past. In some cities it is the police themselves who embitter the life of the ex-criminal by a systematic persecution which often drives him to despair.

For hundreds of these men we have found temporary employment in our own establishments until we could safely recommend them to employers of labor, after satisfying ourselves of the genuineness of their reformation. In this way and with our guarantee they have been safe from the attacks of the blackmailer.

CHAPTER 18

WINTER RELIEF

The severe character of the winter in our northern states makes the provision of special winter relief a matter of urgent necessity.

"We prayed for the snow and eagerly watched the passing clouds," said one of the sufferers, now an officer in our ranks, "because then we knew there would be a chance of earning a dollar a day for sweeping it away."

It was stated not long ago that when 6000 shovels were given out by the city of New York for clearing the snow, there were 10 men fighting for each shovel. It seems hardly credible to think that 60,000 men, mostly with families dependent on them, should struggle fiercely for the privilege of standing in the bitter cold for 10 or 12 hours, with but little underclothing, and most of them without proper overcoats. And yet such was the case.

Regularly organized winter relief has been carried on by the Salvation army, and this on a vast scale. In the city of Detroit during a severe winter, when poverty and suffering were intense, our officers were used by the authorities and citi-

zens for the distribution of food and clothing to the value of \$200,000 an exact list being kept of the 7000 families assisted and of the articles supplied.

During the severe blizzard of 1899, when traffic was paralyzed, and in many cases a coal famine prevailed, the doors of our halls were thrown open throughout the country, and those who could not obtain warmth and food in their tenements were cared for by thousands, the police and city authorities cooperating heartily with us in our efforts. Indeed so terrible was the distress that the police stations and armories were officially thrown open in New York and instructions issued by the state and city authorities to supply food and shelter to all who might appear to be in need. It was then that one of the finest compliments was paid to the Salvation army by the poor of the city. Our halls and institutions were crowded to the doors, while but few availed themselves of the proffered hospitality of the state. Our large hall and headquarters in 14th street accommodated nightly about 1000 persons, while from the regimental armory across the street we received a polite request to supply coffee and bread for 16 persons who had applied for help.

Fearing that the police stations might be as crowded as our halls, and that it might be necessary to engage and fit up some empty stores, we telephoned to the police headquarters to inquire what was the condition of affairs. "We have plenty of room," was the reply. "All the people have gone to Booth Tucker's show." We were, indeed, grateful to learn that in their hour of need they should thus openly manifest their confidence and take advantage of the help we had provided.

CHAPTER 19

MEDICAL RELIEF

In a country which abounds with hospitals and medical relief, it may naturally be supposed that there has been but little necessity for us to make any extensive additions to our respon-

sibilities in this direction. We have been glad to avail ourselves to the utmost of the generous assistance afforded us by existing institutions.

Nevertheless little by little work of this character has been forced upon us. The nursing of the sick in their own homes, the caring for maternity cases in the slums and in our rescue homes, the ministering to those of our own people who were ill, and the fact that we have now in our own ranks a considerable number of those who possess medical experience, have led to important expansions in this direction.

CHAPTER 20

SUMMER OUTINGS FOR THE POOR

To the children and women who have no opportunity of escaping from the scorching heat of our summers, the luxury of an occasional steamer-trip, or outing, can hardly be over-estimated. In Brooklyn, Philadelphia, Boston, Cleveland, Chicago and many other cities arrangements have been made for the careful distribution of tickets amongst those who need this form of relaxation the most. In many cases the street-car companies have cooperated with us by granting free transportation.

In Kansas City a summer camp has been established in one of the principal parks. Here tents are pitched and poor families have the privilege of spending a week at a time under the trees. Sick children at the point of death have been restored to life and health in an incredibly short space of time, to the joy of their parents.

CHAPTER 21

PENNY ICE WAGONS AND PENNY COLD DRINKS

Penny ice wagons and penny cold drinks have constituted another popular form of summer relief. In Kansas City our ice wagons pass regularly through the poor quarters, selling a large block of ice for a cent.

In Boston penny cold drinks have proved extremely popular and have helped to counteract the influences of the saloon.

CHAPTER 22

CHRISTMAS AND THANKSGIVING DINNERS

Our almost invariable rule is that whatever we do for a poor man must be paid for either in cash or labor. The price may be ridiculously low, or the task may be accomplished in an hour, and yet it must be something which he will feel is equivalent to the help which he receives. Thus we help without pauperizing.

At the same time we can not but feel that there are times when this rule should be relaxed and the poor should be invited to our table "without money and without price." The two annual occasions when this takes place are Thanksgiving day and Christmas day. On the former occasion we commonly provide for about 20,000 persons, while on last Christmas day we spread our table for 145,000. In New York alone 25,000 meals were provided, the vast and well-known Madison Square garden being engaged for the occasion. In Chicago, Boston, Cleveland, Philadelphia, St Louis and other large cities the number averaged from 5000 to 10,000.

Nor are the poor treated on these occasions as if they were paupers. Our officers and soldiers wait upon them personally, gladly sacrificing their own family enjoyments for the purpose, and treating them with loving heartiness. The tables are loaded generously with turkeys and cranberry sauce, with roast beef and pies, with fruit and crackers. Those who are prevented by illness and other domestic causes from attending in person, receive baskets filled with food in their garret-homes, and a link of love is forged between the needy, and the citizens of each city, the value of which in troublous times it is difficult to overestimate.



GROUP OF SLUM OFFICERS IN NEW YORK



CHAPTER 23

MISSING FRIENDS AND INQUIRY DEPARTMENT

Had America been discovered in his days, the prodigal son would surely have gone there! Certainly it is the favorite home of the modern prodigal.

At the time of writing we have no less than 1000 cases of inquiry under investigation. Quite recently an heir to an estate was hunted up by our officers, after the police had failed in their attempts to discover his whereabouts.

The fact that our *War cry* is published in 45 different countries and colonies, being translated into 26 languages, enables us to follow up clues from one country to another, our officers and soldiers gladly furnishing their services free of all expense in this mission of love.

CHAPTER 24

FARM COLONIES

THE LANDLESS MAN TO THE MANLESS LAND

Domicide, or the destruction of the family and the home, is one of the worst signs of modern civilization. "I have three brothers," said one of our Bowery boys, adding with the mother wit which often characterizes this class, "but only one is *living*! The other two are *married*!"

The pivot of true social reform turns upon the preservation or restoration of the *family unit*. Society must discover methods for dealing with its poor, which shall make it possible for them to marry and support their children in decency and comfort. Destroy the home and you destroy the nation. We must show the poor man how he can afford to get married.

The keenest anguish of a city life is that which centers round the starving family. The single man, or woman, is not to be so much pitied. It is much easier for such to pick up a living. Even if they fall, they fall alone.

It is far otherwise with the family. Here the finger-prints of poverty leave their blackest mark, and the suffering is the most appalling, because the victims consist so largely of weak women and innocent children and of the class who are eager to work if they have but the chance.

What has society to offer? The brand of pauperdom and the annihilation of the home! As a condition of its assistance, family ties must be severed. The father must go to this semi-penal institution, the mother to a second, and the children to a third. Even then, if the future presented some hope of reunion, the pauper's lot might be made more endurable. But no! "All hope abandon ye who enter here!" What wonder then that the poor hate a system which means the trampling upon the tenderest affections of the heart?

The very prosperity of our cities has attracted to many of them a larger population than they can absorb. For every thousand families who could obtain employment on a living wage, two and three thousand have flocked to our great manufacturing centers, with the inevitable result that our principal cities have been overcrowded with an increasing number of those who, if not absolutely dependent on public or private charity, eke out a hand-to-mouth existence of a painful and humiliating character.

How is this growing and ghastly evil to be combatted? Already taxes have become so heavy in some places that it has been no uncommon thing for owners of property to abandon their rights through inability to bear the burden. The evil is visibly increasing year by year.

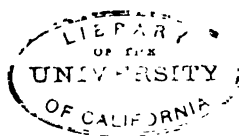
One class of reformers assert the absolute right of the "out-of-works" to be found employment by the state. But how is this to be done without seriously damaging the position of the "*in-works*?" The moment the produce of the labor of the "out-of-works" is thrown on to the market, it can hardly fail to lower the value of the goods they produce, and thereby lower the wages of the "*in-works*" with whom they compete,



A GROUP OF AMITY, COLO., COLONISTS.



OUR FIRST STABLE ON THE PRAIRIE.



and this on an unfair basis, inasmuch as they constitute cheap and underpaid labor.

Now the farm colony plan avoids this difficulty altogether. It says in brief: "Place the waste labor upon the waste land by means of the waste capital, and thereby convert this trinity of waste into a unity of production." It goes "one better" than the mere "living wage" or "work for everybody" idea, inasmuch as it proposes to recognize and maintain the family unit, and to transform each workless family into a *home-maker* and a *home-owner*, and this without imperilling the position of the "in-works." On the contrary, the latter will be vastly bettered, first by the removal of the terrible incubus of taxation, and second by the fact that the multitudes thus happily removed will immediately require the produce of the "in-works" labor, thereby increasing the home demand enormously.

Suppose, for instance, as has been suggested by a leading New York philanthropist, that a fund of \$100,000,000 should be created for finding temporary employment for the "out-of-works" in the cities where they at present congregate. This would probably aggravate the evil instead of mitigating it. For one thing it would enormously increase the temptation, which is already drawing millions of our country population to the cities, by adding an element of apparent security, since they would feel that if they failed to obtain work for themselves, they could always fall back upon this fund.

Again, it would quickly be exhausted. Already \$50,000,000 are being annually poured down the throats of our 3,000,000 submerged without producing any appreciable difference, beyond prolonging their existence under circumstances, which are alike degrading and dishonorable. As for really mitigating or removing the evil, it does not even pretend to do so, and it may be fairly questioned whether our present system does not daily and hourly aggravate it.

And yet the real remedy is so extremely simple that it seems amazing that it has not been accepted and put into operation

long ago. The same money which is now absorbed year by year, either in placing the "out-of-works" in cruel competition with the "in-works," or in training the former in habits of idleness, while sacred family ties are ruthlessly shattered, and vast and increasing hordes of homeless and hopeless men and women created, to be a prey to the anarchist and a menace to society — the same money, I venture to assert — only yearly less of it, might be invested in buying land, erecting cottages, and planting colonies of happy, home-owning families, who would be a bulwark of strength to our nation.

On this plan, even that most hopeless and degraded production of our modern civilization, the genuine "*hobo*," would be turned, if I may so play upon the word, into a "*homebo*," or at least a "*hopebo*!" Flash before the eyes of even our criminal, as well as of our pauper, population, the possibility of becoming, not merely the serfs of the soil or of the labor employer, but *home-owners*, and it requires no prophet to discover that you will cut in two the present number of our institutions for these classes.

The existing annual expenditure of \$50,000,000 would suffice to remove from our cities 500,000 men, women and children in families, at an average cost of \$100 per head. The money so laid out would be permanently and safely invested, and would be secured by the "natural increment" of the land thus densely peopled. The colonies would easily pay 5% interest on the investment, and the entire outlay would be repaid within, at the longest, from 10 to 15 years, when it would be reinvested in planting another vast series of colonies.

That this is no mere idle dream is proven by the experience we have already gained on our three American colonies. In Colorado, in California, and in Ohio, we have established experimental centers, the results of which have been eminently satisfactory. We were told by many that so infatuated were



SALVATION ARMY WORKINGMEN'S INSTITUTE, SAN FRANCISCO CALIFORNIA



the poor with city life, that no persuasions would prevail on them

- a) to *go* to such colonies at all;
- b) to *stay* on them if they did go;
- c) to *work* with the industry which a farmer's life would entail; and

- d) to *pay* back the money expended in transplanting them.

It was also pointed out to us that the attempt to colonize had often failed, even under the most favorable circumstances, owing to the above causes.

But the failures of the past may always be traced to some distinct cause, which should serve as a warning beacon to future enterprise, and not for its discouragement. Because the coast of the Atlantic is dotted with wrecks, shall we refuse to found our New Yorks and Bostons? Nay, let us erect all the needful lighthouses, mark with buoys the dangerous channels, blow up, if needs be, the Hell's Gate obstructions, and then throw open our harbors to the commerce of the world!

Even so with our colonization plans, it will be found that the failures of the past have been almost entirely due

- a) to lack of proper organization;
- b) to the spirit of self-seeking;
- c) to the lack of capital; or
- d) to the careless choice of unsuitable colonists.

All these causes are perfectly avoidable. They are rocks on which common sense can build its warning signals, and of which future enterprises can steer clear.

That America is singularly suited for operations of this character, is proven by the fact that they are already being carried on, quietly, but on a vast scale and with remarkable success under our very eyes by the Mormons. From Idaho to Arizona, from Nevada to Colorado, they are rapidly absorbing under the homestead laws the richest and most fertile valleys of the great Western plateau. Pastmasters in the art of irrigation and cultivation, they are accumulating a wealth and

laying the foundations of a power, the extent of which it is difficult to overestimate.

Surely, it is high time that our vast Eastern centers of civilization and wealth from Chicago to New York, from Boston to Washington, should wake up to the grand possibilities that lie before them, and turn some of their immense accumulations of non-interest-earning capital to the solution of the nation's greatest problem, and its greatest need by the placing of the landless man on the manless land.

This, I venture to prophesy, will be the coming battle-cry of the philanthropist, the capitalist, and the statesman, while to those interested in the spiritual and moral welfare of our unchurched masses, it will seem all important that the leaven of religion should be mingled with this dough of humanity in its latter-day Exodus in search of a home Canaan!

That thousands in our crowded cities are eagerly waiting for an opportunity to take part in that exodus, we can prove from the list of some 5000 persons who have, without solicitation, offered themselves to us for the purpose.

That they are willing to stay, to work, and to pay their way, has also been abundantly proven by those whom we have been able to send forth.

The Washington correspondent of the *Chicago record* recently visited our Colorado colony in company with the vice-president of the Santa Fe R. R., Paul Morton, and its industrial commissioner, James Davis. It was quite a "surprise visit," quite unexpected by either colonists or manager.

In a glowing two-column story, Mr Curtis gives the history of the enterprise. His concluding paragraphs contain the following sentences:

There is no neater group of houses in Colorado, and no more contented community in the world. Nearly everyone has written to friends urging them to join the next colony that comes out, and those I talked with were enthusiastic over their success and the pleasures they enjoy. It was difficult for some of them to find words to express their emotions. . . .



SALVATION ARMY SALVAGE WAREHOUSE, CHICAGO



The ranchmen and cowboys no longer make fun of the Salvation army colony. They recognize not only a great success, but a purpose also, and give the colonists their hearty and cordial support.

The only serious difficulty that has been encountered by us, has been the lack of sufficient capital to conduct the enterprise on a broad and national basis. With an outlay of \$60,000 we have been enabled on our three colonies to erect about 60 cottages, locate about 200 men, women and children as colonists, pay traveling, freight, and installments on land, purchase about 100 horses and 200 cows, as well as pigs and poultry, together with machinery and general outfit, besides meeting the living expenses of our colonists for nearly two years. The outlay is in every case more than covered by the greatly enhanced value of the land thus thickly settled, each colonist having from five to twenty acres allotted to him, the exact amount varying according to the quality of the soil, the value of the land and the nearness of the market. On our Colorado colony we cleared more than \$1000 last year (1899) by the sale of our canteloupe crop alone, and our creamery is already bringing the colonists a cash income of \$3000 per year. Of the 14 families who formed the original settlers, 18 months ago, and of the 12 additional families who have since joined them, all but one are self-supporting, and the solitary exception is due to illness. Strangely enough he is the only single colonist, the others being married, and mostly with large families.

The following prominent citizens have warmly advocated this system of dealing with the poor, and have cordially co-operated with us in our work: The late Governor Roswell P. Flower, of New York; ex-Governor Alva Adams, of Colorado; Governor Hazen Pingree, of Michigan; Hon. Benjamin F. Tracy, former secretary to the navy; Hon. Charles F. MacLean, justice of the supreme court of New York; Hon. John E. Milholland, former editor of the *Tribune*, New York; Hon.

Josiah Quincy, former mayor of Boston; Hon. Platt Rogers, former mayor of Denver; Hon. James D. Phelan, mayor of San Francisco; Hon. L. R. Ellert, former mayor of San Francisco; Hon. Luther Laffin Mills, attorney, Chicago; Hon. Myron T. Herrick, president Bank of savings, Cleveland; Rabbi Voorsanger, of San Francisco; E. P. Ripley, Esq., president of the Santa Fe R. R.; John E. Searles, esq., of New York; Claus Spreckles, esq., of San Francisco; Daniel Meyer, esq., of San Francisco.

At the Sixth national irrigation congress, the following resolution was unanimously passed:

Resolved, That we have heard with great interest and great pleasure Mrs Booth Tucker's presentation and explanation of the purposes of the Salvation army in organizing colonies of the worthy poor in our great cities to settle and build homes on the rich irrigated lands of the west. This is a grand, noble and patriotic work, and deserves the earnest commendation and support of every citizen of our country. The west extends a hearty welcome to these people, and we pledge our sympathy and support in aiding these people to make happy homes upon our rich and productive land.—*Lincoln, Nebraska, September, 1897*

The fact that we have so large a number of social relief establishments, accommodating about 7000 persons, scattered throughout the principal cities of the United States, and that in addition to this our 704 corps and slum posts bring us into constant and immediate contact with the masses of the needy poor, who have the utmost confidence in our good faith, and know that we are not trying to exploit them in the interests of some land boom or speculative scheme, places us in a specially favorable position for handling such an enterprise. We are able, without any additional expense, to carefully sift and train our colonists before sending them out, and to re-absorb in city life those of them who may not prove to be adapted to the colony.

At the same time, our military and methodical system of



SALVATION ARMY JUNK SHOP, CHICAGO



management enables us to handle these colonists, and to organize and weld them into one harmonious whole in a manner which would otherwise be very difficult.

Certainly it may be said, without hesitation, that there are few branches of sociology, which possess more interest for the student of pauperology. Our farm colonies differ from ordinary poor farms in the same way that our ordinary city institutions differ from a prison. There is nothing of a penal character about them. The colonist is not a mere day-laborer without any direct interest in the soil. He is not separated from his family. The links of love are strengthened, instead of being relaxed, and he has placed before him the bright possibility of becoming a home-owner, while the element of doubt and fear in regard to the future of his children, is removed by the fact that they, too, can marry, settle down and become home-owners like himself, of a similar cottage and lot, without the necessity of being dependent on his earnings or on what he may leave them when he dies. The son and daughter have as good a chance of a start in life as their parents, without any of the bitter experiences through which the latter have passed. At the same time there is nothing to prevent the brightest members of the family from entering legal, mercantile or other professions.

In view of the existing plethora of educational and medical philanthropies, is it too much to hope that America will lead the way along this new line of sociology, and prove to the nations of the world that a poor man properly handled can be a greater source of national wealth than any gold mine which has yet been discovered.



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